FEBRUARY 12, 1953

ENGINEERING NEWS-RECORD

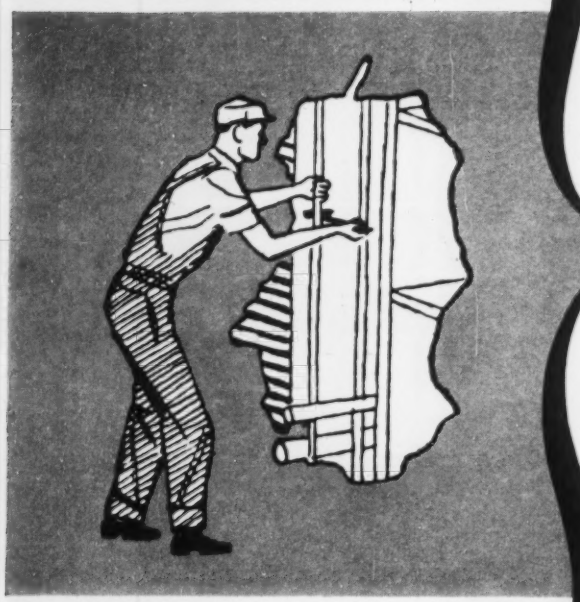
SEVENTY NINTH YEAR OF PUBLICATION

★ GUNNISON'S NEW PREFAB

★ FACTORY SERVICES IN CORE

A McGRAW-HILL PUBLICATION

Pipe Repair Jobs...



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add up to just one thing...

CORROSION COSTS YOU MORE THAN WROUGHT IRON

There's nothing like a repair job to point up the false economy of installing low-first-cost piping. The original installation is quickly made by a pipe fitter, but the replacement calls for hours of work by as many as five crafts, all carrying a high price tag. This first failure may wipe out initial savings, a dozen times over. And loss in production or utilization during shutdown may amount to far more than the maintenance charge.

It all adds up to one thing—*corrosion costs you more than wrought iron.*

In literally thousands of applications where corrosion is a threat to service life, the use of Byers Wrought Iron pipe is the soundest kind of economy move. This material's greater durability, proved in past service records, is curbing high maintenance and repair costs in a wide variety of industries.

The next time you approve or specify pipe, investigate the superior performance of Byers Wrought Iron pipe. Remember, it takes only ONE to *install* pipe, but FIVE to *repair* it!

You'll find a lot of helpful information on the control of excessive maintenance in our bulletin, WROUGHT IRON FOR PIPING SYSTEMS. Write for your copy.

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ELECTRIC FURNACE QUALITY ALLOY AND STAINLESS STEEL PRODUCTS

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by consulting Goodyear Distributor

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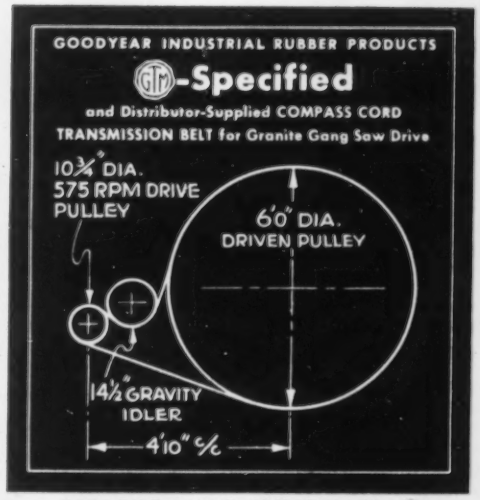
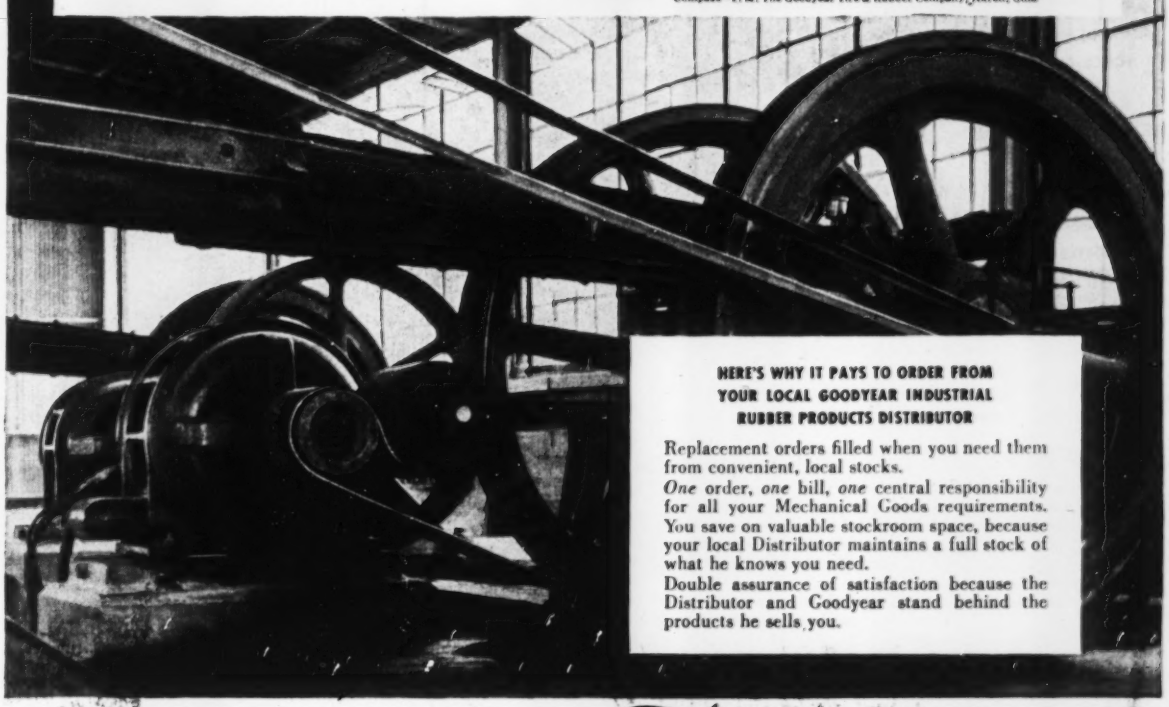


Compass—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio



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ENGINEERING NEWS-RECORD

ABP Member

Volume 150 February 12, 1953 No. 7

WALDO G. BOWMAN
Editor

FEATURES IN THIS ISSUE

Budget stop order causes confusion 21
Construction wage control is dropped 29
Trunk sewer built under a railroad 31
Gunnison's Talisman is a lot of house 33
Factory services placed in central core 37
Propose development of Philadelphia's Chinese Wall Site 41
Air-Conditioned shopping centers start new design trends 44
American Road Builders name new president 48
Associated Equipment Distributors tackle industry problems at Chicago meet 60

DEPARTMENTS

Reader Comment 12
Calendar of Meetings 15
Construction Trends 17
Construction Week 19
National Affairs 21
Labor 29
Municipal 41
Obituaries 46
International 47
Men and Jobs 48
Construction Reports 50
Unit Prices 59
Business and Finance 60
New Products 76
Editorials 88

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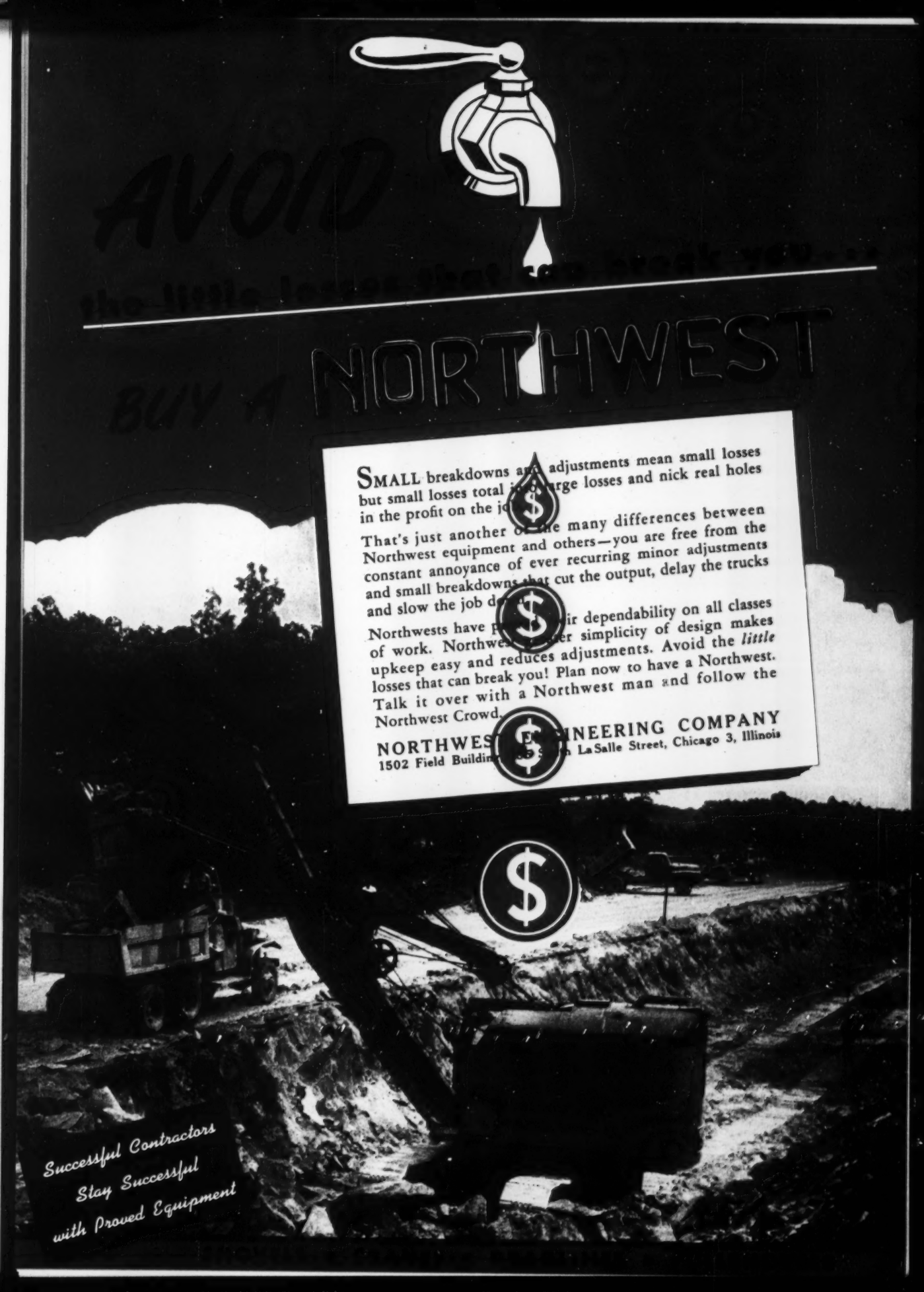
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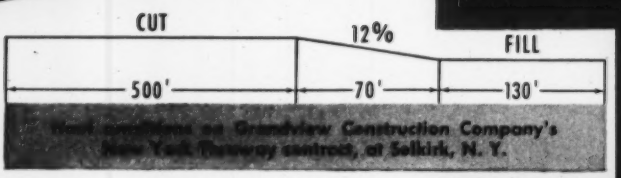


Haul conditions on Grandview Construction Company's New York Thruway contract, at Selkirk, N. Y.

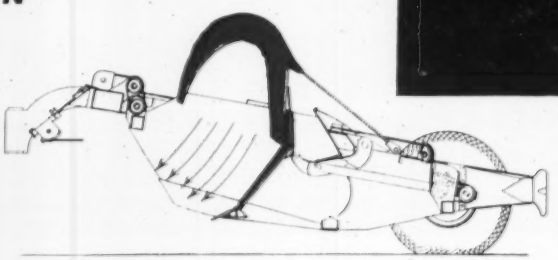
LOAD—haul—spread—and return up a 12% grade—*51 times per hour!* That's the record of the three Heiliners owned by Grandview Construction Company of Mt. Vernon, N. Y. Moving 1,400,000 cu. yds. of sand clay with a heavy water content, each Heiliner made 17 trips per hour —with an average cycle time of 2 min. 56 sec.

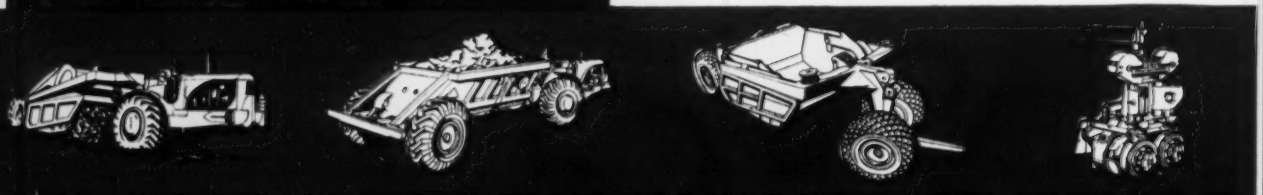
Here's the kind of fast-stepping Heiliner performance which makes earthmoving profitable. It's the kind of production that gives *you* the edge when bids are let.

Positive "TILTING FLOOR" EJECTION HELPS SLASH CYCLE TIME!

On Grandview's New York Thruway job, spread and turn time averaged 15.9 seconds . . . spreading heavy, sticky sand clay! It's proof positive that the Heiliner's *positive* "Tilting Floor" ejection helps cut cycle time to the bone.

Heil's exclusive "Tilting Floor" ejection is the simplest type of forced ejection known. The floor of bowl is hinged back of the cutting blade. As the rear push-out ram is activated by the relatively low line pull, the floor simply tilts up to a maximum discharge angle of 75°. The load is forced out the wide front opening, while even the stickiest material is scoured from the sides and stationary back of the bowl. Material is dumped fast and clean . . . there's no extra yardage left in the bowl to cut down the size of your next load.





WITH THREE FAST-STEPPING

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For faster loading, the dirt "boils" up in the center of the bowl, loading front and back evenly so no long pull is necessary to fill clear to the back. Haul speed is *fast* . . . 25 MPH fully loaded. The powerful 200 HP Cummins diesel gives you lugging power to spare, while big 24:00 x 29 tires with wide-base rims provide the extra traction and flotation you need in soft going. Heil's exclusive, patented Hydro-Steer handles with passenger car ease . . . this easy steering control plus big, safe four-wheel brakes give operators confidence to use the full power and speed of the rig. Heil's famous planetary drive, with full 4" gear faces on sun and planet gears, provides a low-torque drive for smoother, more positive power transmission to each wheel, and permits full utilization of engine horsepower.

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R-2

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CAST IRON PIPE—so well known for its long life and widespread use in community water, gas and sewerage systems—also has diversified uses in various industries. The volume of water, gas and waste handled by many industrial plants is often equivalent to that of a good-sized city.

U. S. cast iron pipe for community or industrial service is cast centrifugally in metal molds in sizes 2-inch to 24-inch with bell-and-spigot, mechanical joints or plain ends. All our cast iron pipe larger than 24-inch and smaller pipe with flexible or integral flange joints are made by the pit cast process. With both manufacturing processes modern control methods are employed to assure a quality product—cast iron pipe that will satisfactorily and economically meet your requirements.

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3 It will reduce your maintenance time and service costs by substituting 4 wheels and tires for about 500 moving, wearing parts of a track assembly that are otherwise grinding in abrasive dirt.

4 It will let your operator work more comfortably, with less fatigue, because of its fingertip electric controls.

NOTE: Tournatractor is now available with Torque Converter. Attachments include Dozer Blade, Angledozer Blade, Down-Pressure Unit, V-type Snow Plow, 33½-ton Winch, Root Rake, Side-Boom Crane.

Be sure to see this machine before you buy any tractor. What Tournatractor is doing for others in the way of giving lower costs, increased production, more efficient use of manpower, and simplified supervision of operation, it can also do for you!

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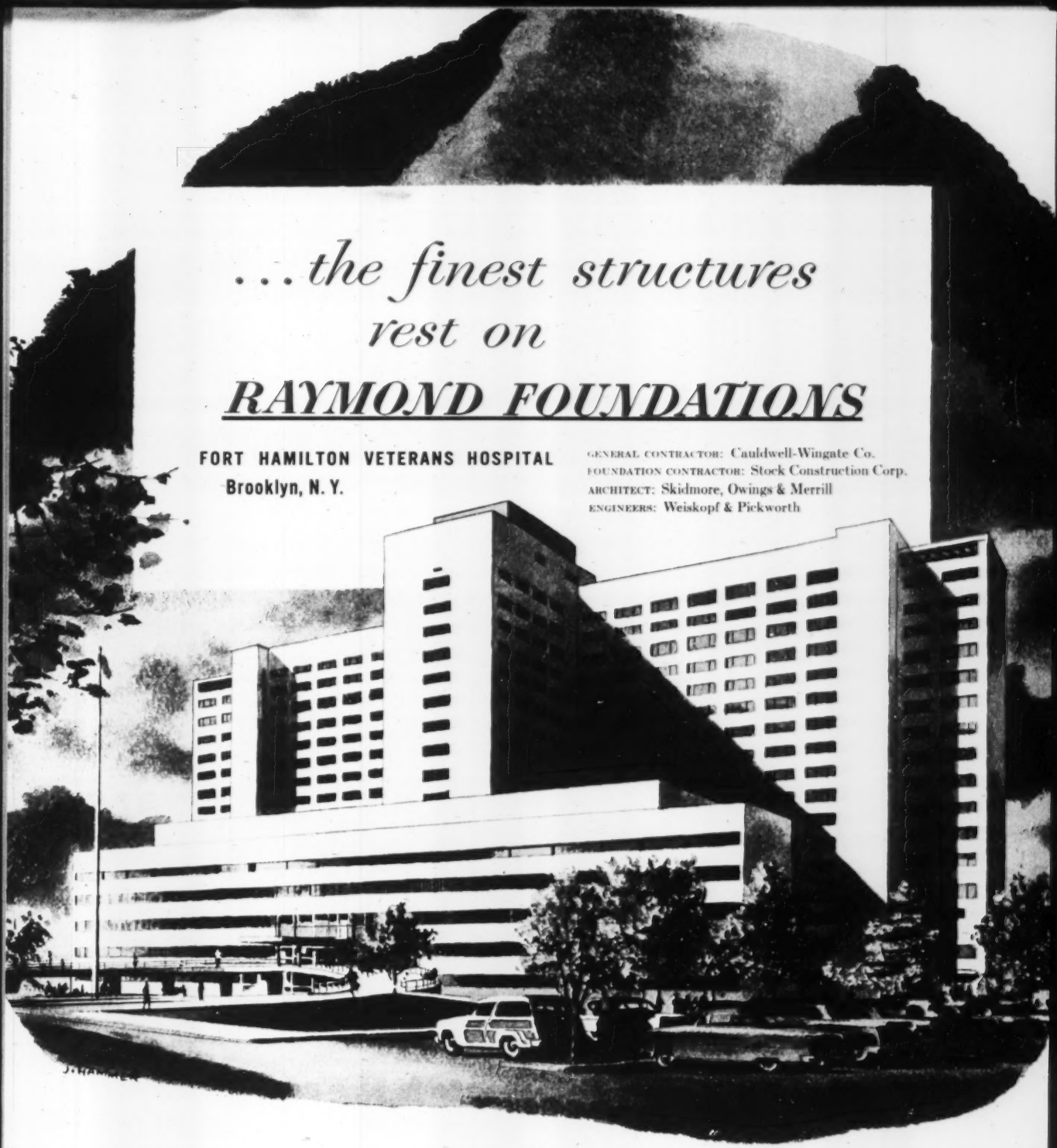

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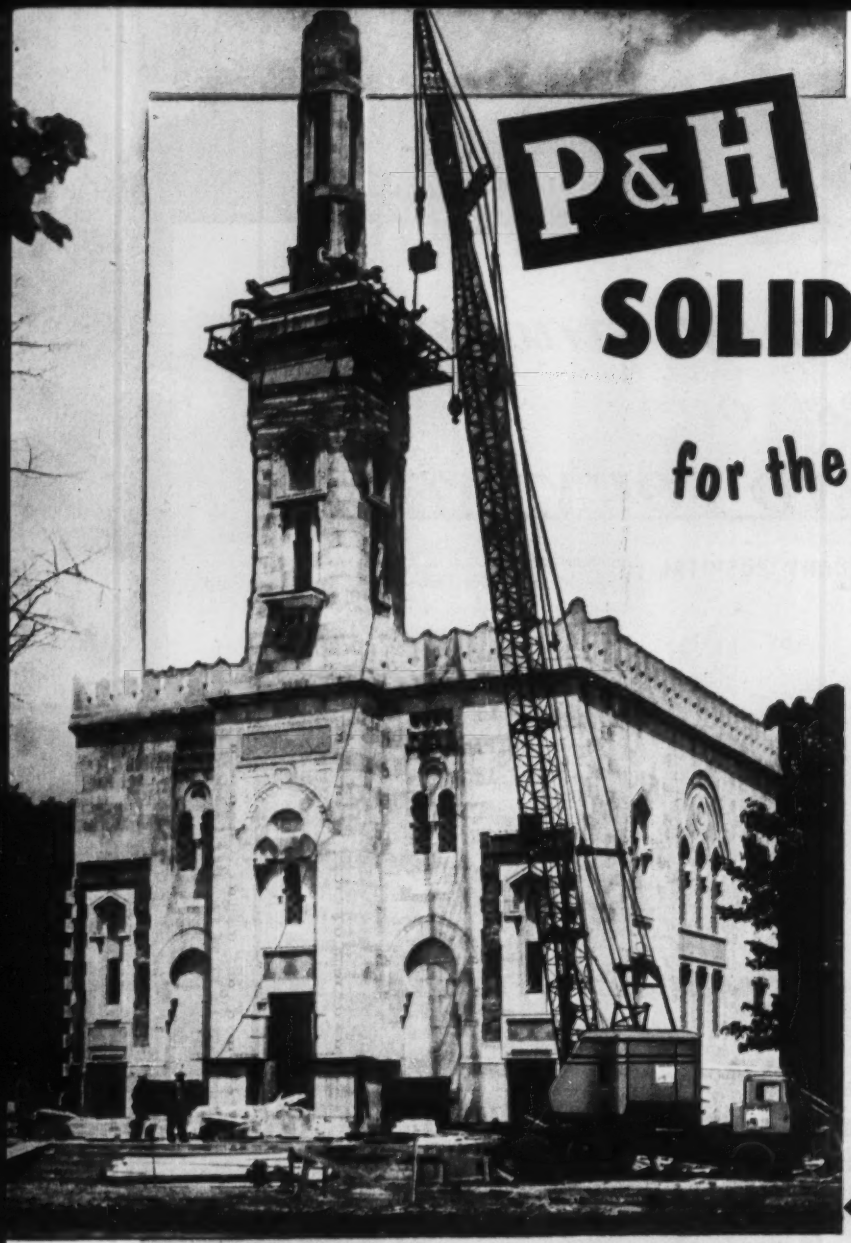

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for the Tip-Toe Reach!

Greater Stability is no idle boast with P&H Truck Cranes. Size for size, around the full 360° of operation, no P&H Truck Crane has ever been outlifted. This ability to put more on the hook means extra safety, extra capacity, extra profit for you. Add to that the smooth hydraulic control that lets you place loads precisely where you want them — dual power suited exactly to the tasks of travel and work — and you have the reasons why contractors are showing a marked preference for P&H. Better double-check now. Ask for literature.

P&H Truck Cranes are also available with remote control.

P&H Model 255A Truck Crane hoists a 2½ ton block, with 90 foot boom and 30 foot jib. This mosque, in Washington, D.C., is the first ever built in the U.S.

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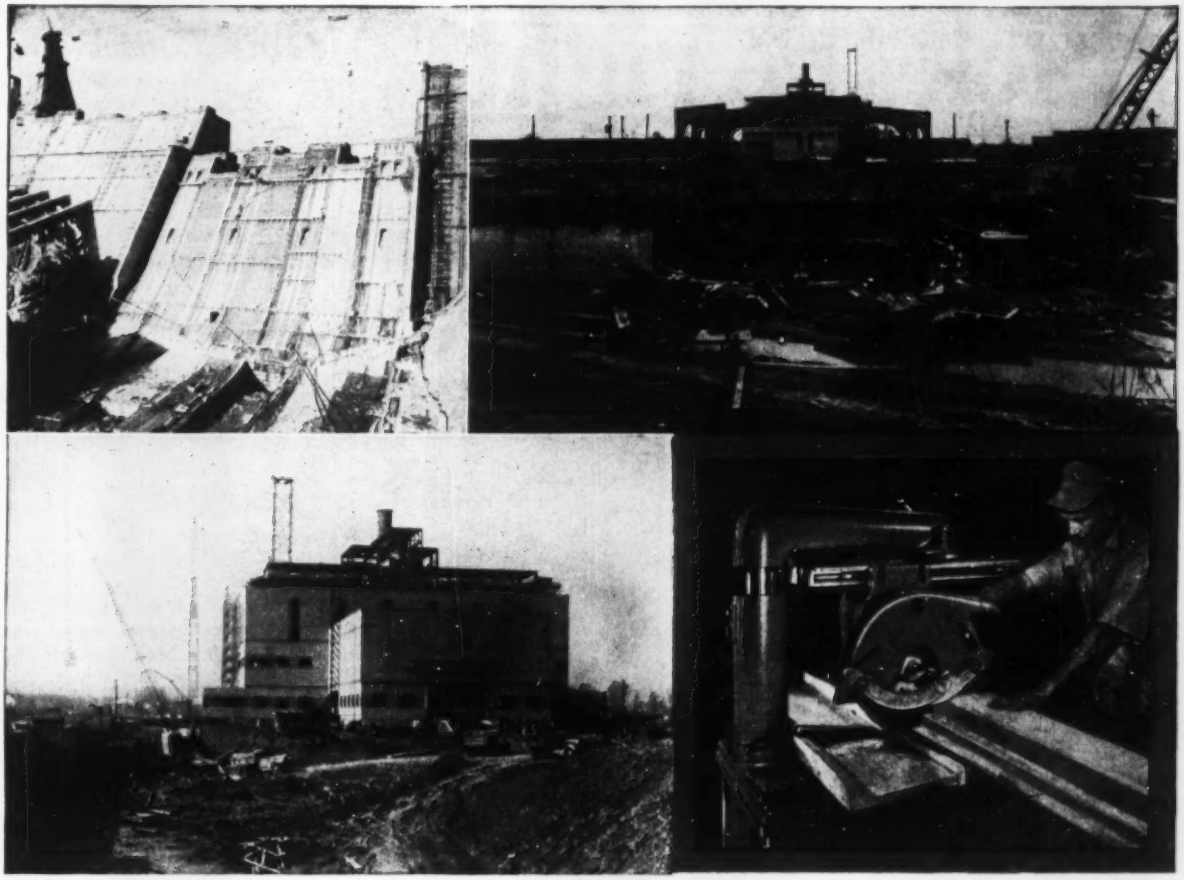


On projects like these **DELTA** Radial Saws save Hunkin-Conkey thousands of dollars

Delta saws do the work of ten men in cutting—yet actual machine cost is less than 30 cents an hour.

A battery of Delta Radial Saws for on-the-job use at construction projects is chalking up annual savings running well into five figures, says Hunkin-Conkey Construction Company of Cleveland, Ohio.

Several of these saws have been in regular use, averaging more than 6 hours per day, for better than 10 years. There's been practically no maintenance—and at actual machine cost, except labor, of less than 30 cents an hour. They do more accurate work than other saws, do it much faster. Workers like the Delta saws for their ease of operation and their excellent safety features.

Savings like these are possible with the new Delta radial saw because of its many exclusive "extras"—rugged construction, 360° turret action, easy-to-reach up front controls—and many others.

For full information consult your Delta dealer (he's listed in the classified telephone directory under Tools) or write Delta Power Tool Division, Rockwell Manufacturing Company, 6888 N. Lexington Ave., Pittsburgh 8, Pa.

MACHINE COST LESS THAN 30¢ AN HOUR

Based on 6 hours operation per day or 1500 hours a year, hourly saw cost figures just under 30 cents, as follows:

	Per Year	Per Hour
Depreciation 10% and average interest 2% on Delta 16" Radial Saw	$75	$ .05
Maintenance and Repairs (average of 7 saws)	30	.02
Saw blade depreciation	36	.024
Saw sharpening, 3 16" blades per week	150	.10
Power cost, 7½ H.P. motor		.10
Total machine cost per hour		.294

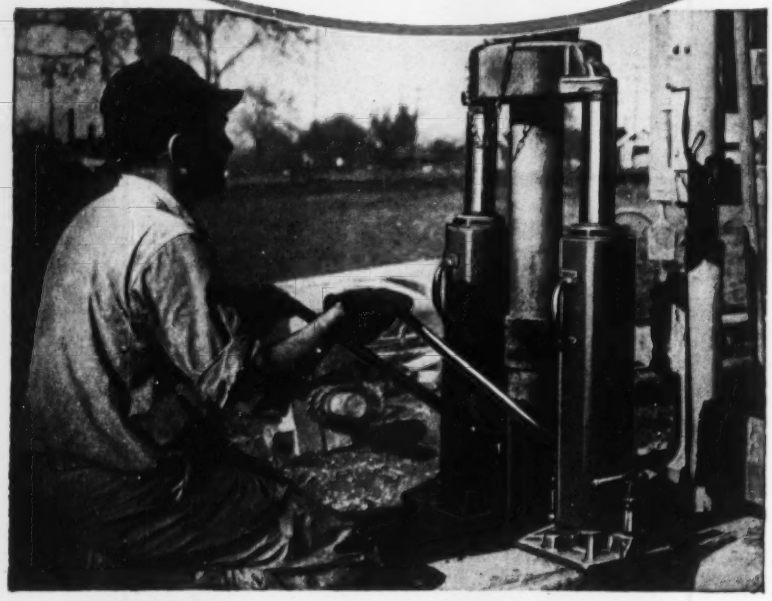
DELTA · MILWAUKEE **DELTA QUALITY MAKES THE DIFFERENCE**

DELTA QUALITY POWER TOOLS

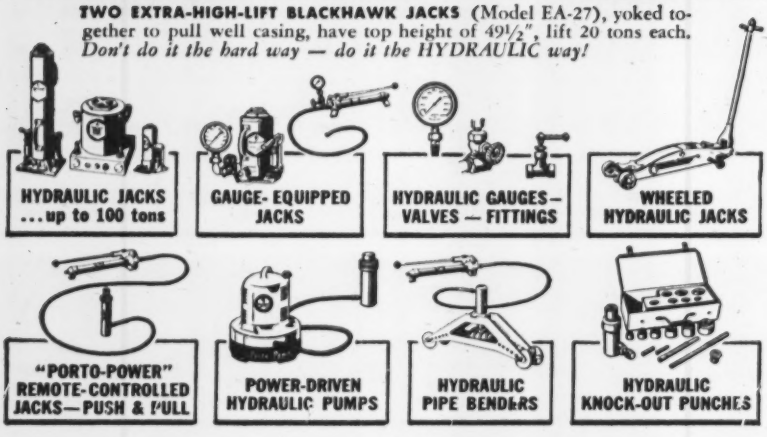
Another Product by **Rockwell**

Pick the right jack for the job

...from the world's most complete line of hydraulic equipment



TWO EXTRA-HIGH-LIFT BLACKHAWK JACKS (Model EA-27), yoked together to pull well casing, have top height of 49½", lift 20 tons each. *Don't do it the hard way — do it the HYDRAULIC way!*



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READER COMMENT

Bar stresses set too low

SIR: The comments of Prof. Ned L. Ashton (ENR Jan. 15, p. 10) brought to my attention an interesting article that I had overlooked, "Designer-contractor firms advance prestressed concrete abroad," in ENR Dec. 11, 1952, p. 56.

The experiments conducted by Profs. Ashton and Lambert were also carried out in 1946 by undergraduates at the Cornell University School of Civil Engineering, Materials Testing Laboratory, under the direction of Prof. H. H. Scofield.

The most important remarks were included in the article mentioned, and they referred to the extended use of cold-worked reinforcing bars in Europe at increased allowable unit stresses. A cold-worked reinforcing bar with the advantages found in European bars has been available in this country for the past few years. This bar is a far superior product in that it also exceeds the requirements for deformation of ASTM Specification A-305.

The conservativeness of engineers in the U. S. has to a certain extent delayed acceptance of higher allowable stresses for concrete reinforcing steel and the reduction in area of steel required to reinforce a structural member. The resultant changes in design constants, when the ratio of concrete area to steel area is reduced, has caused considerable consternation when the working stress of the concrete in compression must be increased about 15% to balance the resisting moments of both steel and concrete.

Actual tests both in the laboratory and on jobs have proved these fears to be groundless. Also, the fear of greatly increased deflection and cracking of structural members has not followed the pattern of theory.

J. WARREN FINCH
Manager of Webrib Sales
Copperweld Steel Co.
Warren, Ohio

Lift St. Lawrence ships

Sir: Here is a suggestion for a solution of the St. Lawrence channel depth problem (ENR Dec. 25, 1952, p. 84) that could be undertaken by private enterprise.

If the proposed 27-ft depth is inadequate because many ships under U. S. registry could not navigate through such a waterway under full load, it might still be economically

(*Continued on page 15*)

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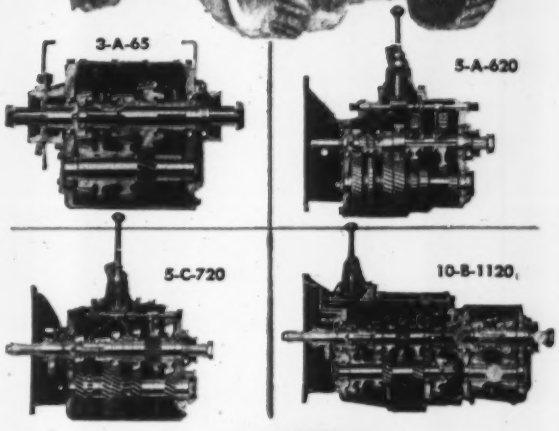
Fuller offers the most complete line of heavy duty transmissions available — more than 100 models—for every heavy duty application using internal combustion engines.

There's a Fuller unit or auxiliary transmission for any application—from two tons to the biggest —to provide exactly the *right gear ratios* for your job—to help your driver keep the engine turning at its most effective speed . . . to assure faster trips —higher average speeds.

That's why you see the Fuller name plate on the gear boxes of more and more trucks and industrial machines. Demand transmissions from the *Fuller* line to get maximum performance from *your* rigs.



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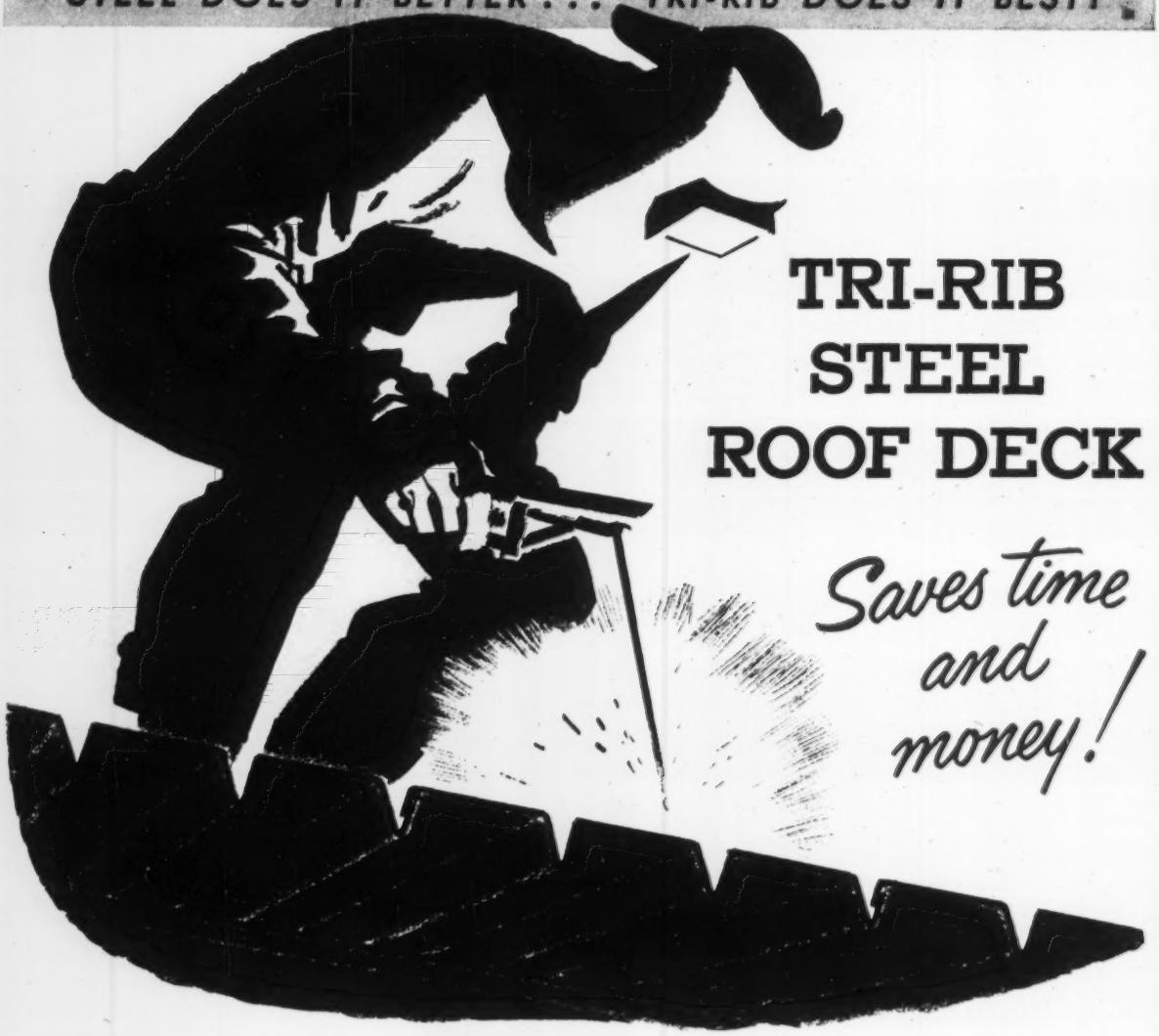
STEEL DOES IT BETTER . . . TRI-RIB DOES IT BEST!



TRI-RIB STEEL ROOF DECK

Saves time and money!

GOES ON FASTER! Grooved for simple end-over-end connection, Tri-Rib fastens to purlins either by clipping or welding. No complicated dovetails or attachments. And Tri-Rib's sheet size is ideal for all installations — 18-inch width, lengths up to 22 feet.

LIGHTER, STRONGER! Tri-Rib is lighter, yet stronger than any comparable roofing. Because of this lightness, dead load is smaller, permitting use of lighter supporting structure, fewer columns, shallower footings.

SAVES STEEL! By reducing dead loads as much as 8 to 22 lbs. per square foot, Tri-Rib saves steel, both in the use of lighter structural supports, as well as in the elimination of sub-purlins.

LASTS LONGER! A roof of Tri-Rib Steel Deck is truly a "lifetime" roof. Made of rugged, corrosion-resistant Cop-R-Loy, Tri-Rib is designed in accordance with specifications adapted by A.I.S.I. for light gauge structures, dated January, 1949.

For specifications, consult Sweets' Files, or write us.

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WHEELING, WEST VIRGINIA

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Wheeling

feasible to get those ships through the waterway. This could be done by using barges or tanks on each side of the ship and a net or cables under the ship to raise it out of the water sufficiently to clear the 27-ft channel. This could be done by hoisting machinery on the barges.

The increased displacement of the barges under load would be equal to the decreased displacement of the ship raised.

EUGENE R. HALLETT, JR.
Civil Engineer
Los Angeles, Calif.

Electric stairways

SIR: We wish to call your attention to a news article published in the Dec. 11, 1952, issue of ENGINEERING NEWS-RECORD, on page 52. The write-up refers to the new escalators for the Board of Transportation.

This article states, "These escalators will be the first in the United States to have two operating speeds." This statement is incorrect.

The facts are as follows: In 1951, the E. I. duPont deNemours Co. purchased ten electric stairways for their new office building at Newark, Delaware.

These were the first two-speed electric stairways in the United States. They were manufactured by Westinghouse Electric Corporation, and now are installed and running. They are used by the office personnel of du Pont's and the general public visiting the building.

The second installation of two-speed electric stairways in this country was that purchased by the Pennsylvania Railroad Company for its 30th Street Station in Philadelphia where Westinghouse is now installing three two-speed 4-ft-wide electric stairways. This order was placed in 1951.

The third installation of this kind was purchased in 1952 by the Pennsylvania Railroad Company for its new Pittsburgh terminal where there will be eight two-speed electric stairways.

In 1952, there were two other contracts placed for Westinghouse two-speed electric stairways; one on the West Coast consisting of ten electric stairways for the Naval Radiological Defense lab, San Francisco, and another for two units in the Snellenburg's department store, Willow Grove, Pa.

The latter installation will be the first of its kind in a department store.

E. B. S. BOYLE, *Manager*
Area Application Engineering
Westinghouse Electric Corp.
Elevator Division

Lipe

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Based on a unique application of the toggle principle, this LIPE constant-capacity CLUTCH compensates for wear of friction material . . . compensates for fading pressure of expanding springs . . . never loses torque capacity while there is a reasonable amount of friction material left to hold. The constantly increasing leverage of the toggle — which never goes over center—builds up pressure in almost direct ratio to these losses.

Toggle Action Insures Smooth Engagement

Despite its multiple pressure action and positive drive, the engagement of this clutch is gentle and chatter free. This is due (1) to the fact that the initial energy of the springs is partly absorbed by the toggles, and (2) to the fact that the rate of engagement is slowed by the reduced speed of the toggle as it approaches center.

High thermal efficiency is assured by a massive plate, ribbed for faster radiation, and cooled by positively generated air currents.

It's a clutch that is bound to change your ideas about clutch design, capacity and service. Write for specifications and performance data.

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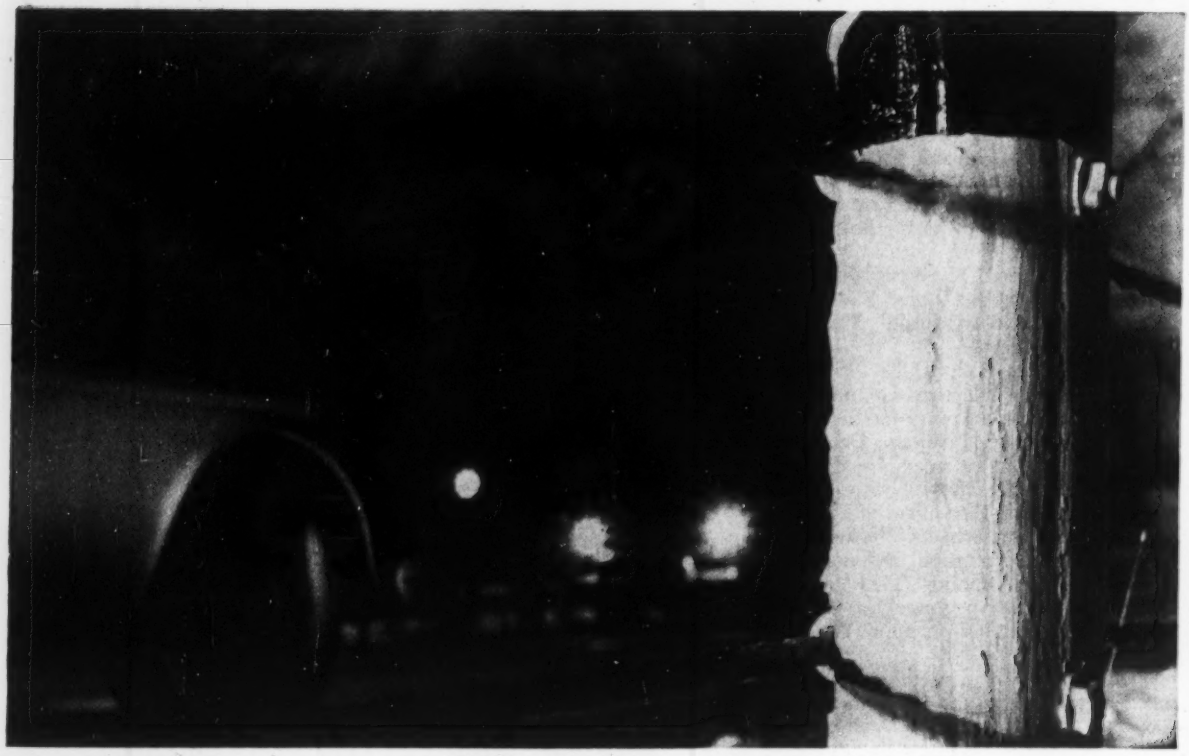

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PENTA*-treated guard rail posts will serve you and your community in two very important ways.

First, they can cut your repair and replacement costs in half. This is possible because PENTA protects wood against decay and termite damage, keeps it strong and serviceable for an *extra* 10 to 15 years.

Secondly, PENTA-treated posts will serve your community by giving dependable, sure highway protection. Barring mechanical damage, they can be relied upon to stay sound and strong years longer.

PENTA-treated posts can be painted, too, enabling you to maintain an attractive as well as a sound guard rail system. Just specify a paintable type of treatment.

Write today for more information about this modern, clean wood preservative, *PENTAchlorophenol. THE DOW CHEMICAL COMPANY, Midland, Michigan.

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DOW

The coming decline in family formation

Home builders have long known that household formation—source of most new demand for housing—is due to decline. Now the Census Bureau has produced some statistics that help in estimating how serious the decline will be—and what home builders can do to help keep housing demand high in the next decade.

The Census Bureau made three projections—high, medium and low—of the future course of household formation. The number of households increased 8,500,000 between 1940 and 1950. The gain between 1950 and 1960 would be about the same under the bureau's most favorable projection; it ranges down to 6,500,000 and 4,600,000 under less favorable assumptions.

If the "most probable" projection of 6,500,000 new household formations proves to be accurate, it's obvious that home builders will suffer a considerable loss in housing demand from this source. But even the highest projection promises trouble; a large part of the increase expected for 1950-60 has occurred already, and the trend is downhill from this year on. The worst pinch is expected in the later years of this decade.

• **Not enough young married people**—Chief reason for the coming decline is an expected drop in marriages. By 1960, there will be 1%-5% fewer adults in the common marrying ages, between 20 and 34 years, than in 1950, even though the total population may have increased by as much as 19%-20%. That's the result of the drop in birth rates back in the thirties.

As a result, the number of married couples may increase as little as 2,400,000 in ten years, according to the census figures. Maximum projected is 6,300,000; a private estimate puts the probable increase in roughly the top half of the same range—4,000,000 to 6,300,000 between 1950 and 1960. Between 1940 and 1950, the number of married couples went up 7,400,000.

However, while the number of married couples won't increase so fast in the future, the number of other households is likely to grow rapidly. The census medium estimate calls for an increase of 37.4% in the number of households headed by women. That's because women tend to live longer than their husbands and to maintain their own households after their husbands die. The number of households headed by single men probably will increase also.

There is, of course, no guarantee that any of the census projections will prove accurate; population projections are notoriously unreliable. But they do reflect trends. And they help pinpoint problems home builders will have to face.

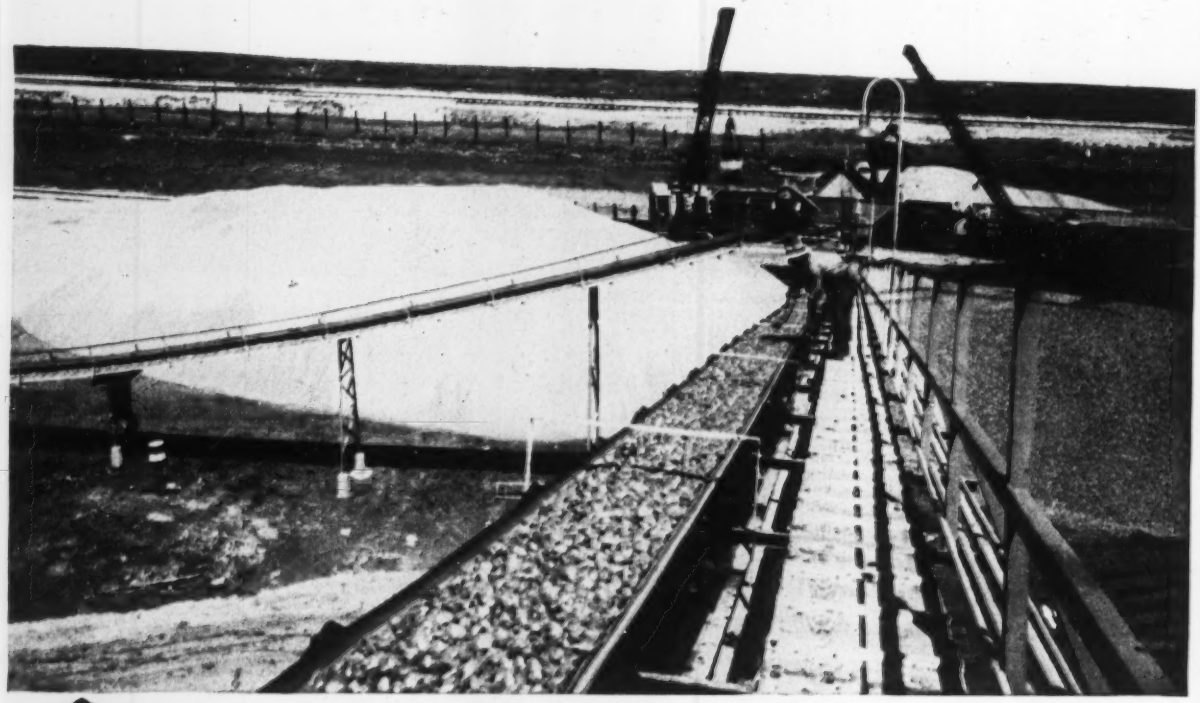
New married couples will be a markedly smaller source of housing demand, especially in the second half of the fifties. That would seem to point to a lower demand for small, two or three-room apartments and low-priced houses.

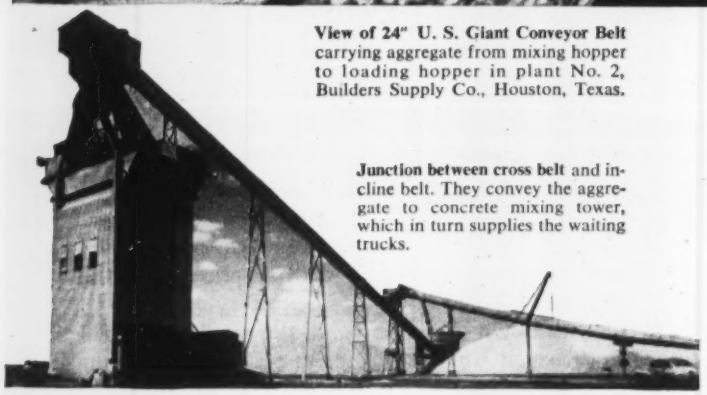
• **Small households to increase**—On the other hand, the number of small households headed by single men and women will increase. They might—under the most favorable assumptions—take up the slack in demand for smaller dwelling units. But it's worth noting that this growing source of demand depends heavily on the level of prosperity in the nation. Single people have tended to set up their own homes during the period of prosperity since the war.

The over-all demand for new housing is likely to decline unless builders can develop a large replacement market. Some of the suggestions brought forth at the recent meeting of the National Association of Home Builders—such as making new homes especially desirable with air conditioning, new designs or more space for the same price—will certainly help.

Perhaps the most promising angle is the one that was referred to in previous Trends—the need for large dwelling units. Census figures indicate that the number of people between the ages of 10 and 19 will increase at least 40% between 1950 and 1960—even if the population should grow as little as 9%-10%.

How U. S. Rubber belt engineers cut installation costs





View of 24" U. S. Giant Conveyor Belt carrying aggregate from mixing hopper to loading hopper in plant No. 2, Builders Supply Co., Houston, Texas.

Junction between cross belt and incline belt. They convey the aggregate to concrete mixing tower, which in turn supplies the waiting trucks.

In a new concrete mix plant, original plans called for the installation of a 5-ply, 36 oz. duck conveyor belt to handle the aggregates. But United States Rubber Company engineers pointed out that their 4-ply, 42 oz. duck belt would not only cost less, but would be more flexible crosswise to trough, would train more easily and provide high-tensile strength as well. This 1,275-foot, 4-ply U.S. Giant Conveyor Belt was installed. It travels 300′ per minute and delivers 294 tons per hour.

This is another instance of why it pays to consult "U.S." engineers before going ahead on a conveyor belt problem. Remember that they are backed by a wealth of experience and vast research facilities. Finally, they will work with your engineers and with the designers of conveyor equipment—a 3-Way Engineering teamwork that always pays off in higher output at lower cost. Write to address below.

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• **What happens to prices?**—The big debate is now over what happens to prices that the construction industry will pay for what it needs—now that President Eisenhower has dropped all significant controls by executive order.

On materials, the argument is hot and heavy. OPS officials are predicting increases in metals and metal products ranging up to 10%. But industry leaders are willing to bet significant amounts that OPS is wrong—that any price increases will be slight, and will quickly readjust when a true supply-and-demand market makes itself felt.

The business reasoning goes like this: There's no real shortage of any material that construction needs for its ordinary business right now. And ceiling prices have been so generous anyway—so there doesn't seem to be much pressure upward. In steel, for instance, current price regulations are a formula based on a 1950-51 base period, plus present cost of labor, plus 90% of the base period profit percentage. That's generous enough to assure—say steelmen—that prices on fabricated structurals and similar items won't push up much. In fact, there's been some scattered worry in the steel business that prices may have to drop.

One possible fly in the ointment: If complete release of all controls should bring a crest flood of pent-up project demand (a circumstance that would depend on money supplies and business courage), there might be enough of a push on materials to force some price swings.

• **No standby**—In any event, there'll be no standby law on prices and wages, despite those proposals by Sen. Capehart of the Senate Banking Committee. Responsible Republican congressional leaders—and Eisenhower himself—want no such authority on the books (all the President asked was authority to guarantee delivery of materials when needed to contractors making military and defense-supporting items.)

But the whole price and wage control program has been skidding downhill fast for months—and all that seems to remain now, anyway, is some paper shuffling and cleanup work.

• **Effect on labor**—One area, however, where the dropping of controls will have major effect on construction is labor (see page 29 for details). With most construction labor contracts up for renewal this spring, there is almost certainly going to be fireworks here. AFL president George Meany—an ex-building trades man himself—is already on record with the statement that restudy of contracts is certainly in order.

One hunch on labor thinking: You may see a concerted drive to get all those fringe benefits piled up in the past few years turned into cash pay, now that restrictions are going off.

• **New facing**—A clay exterior surfacing suitable for economical modernizing of older houses is now in the development stage, might make a big market for smaller builders.

Robert B. Taylor, director of the Research Foundation for the Structural Clay Products Institute, says the new process will give the appearance of brick, will provide the same maintenance and durability qualities as brick, and be installed at prices no higher than most existing types of resurfacing materials.

He had no date for commercial production of materials, however.

• **World's biggest runway**—Bids are due in mid-March at Los Angeles for what is without doubt the biggest flying strip in the world.

The Corps of Engineers will read the tenders for 15,000-ft long, 300-ft wide concrete strip, to be built without expansion joints, at Edwards Air Force Base in California's Mojave Desert.

Edwards is a major base for testing experimental and new plane models, hence the strip's size is predicated on testing work, not routine operations.

Largest safety signal

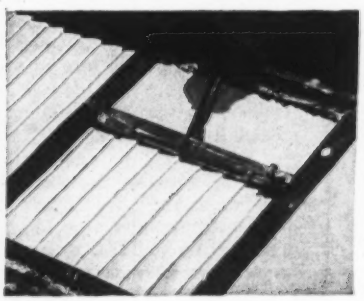
The gigantic "Curve Right" warning on this super-highway is *the curb itself*. It's a Concrete Reflecting Curb made with Atlas White Cement, and it clearly outlines the road ahead 24 hours a day.

Reflecting Curb is highly visible by day because Atlas White Cement makes it stand out in bright contrast to pavement gray. At night, the curb becomes a shining ribbon of white as thousands of corrugations reflect headlight rays back to the driver. And on wet nights, when good visibility is needed most, the wet reflecting faces become even more effective . . . outline the road even better.

Placement is fast and simple. One method is to pour an Atlas White Duraplastic* mortar mix on a gray cement base, screed to 1-inch thickness and score with a hand tool (pictured right). Contractors prefer Duraplastic* because its air-entrainment feature makes the mix more workable, more plastic; makes placement and scoring easy.

For more information write: Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N. Y.

This Concrete Reflecting Curb on the Pennsylvania Turnpike near Philadelphia acts as a huge "Curve-Ahead" signal. It's made with Atlas White Duraplastic Air-Entraining Cement. Owner: Pennsylvania Turnpike Commission. General Contractor: L. G. Defelice and Son, Inc., North Haven, Conn. Curb installed by Polselli & Angelucci, Philadelphia.



*"*Duraplastic*" *is the registered trade mark of the air-entraining portland cement manufactured by Universal Atlas Cement Company.*

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FEBRUARY 12, 1953

VOL. 150, NO. 7

ENGINEERING NEWS-RECORD

Federal awards delayed for review

Bidding to continue but contract-letting faces possible two-month slowdown; cancellations unlikely

(Washington staff report)

All federal construction contract awards face a one-month to two-month slowdown as a result of the Eisenhower-Dodge economy order of Feb. 3.

Advertising and opening of bids will continue during the interim freeze period. But no contracts will be awarded until they have been cleared by the departments heads.

First indication of how the general freeze will be applied came from the Defense Department order issued last week by Secretary Charles E. Wilson. The three military services promptly notified their construction field offices to make no awards after Saturday, Feb. 7 but to go right ahead advertising proposals and opening bids on schedule.

As part of the economy move, the military services right now are compiling lists of all construction projects that are less than 20% complete as of Tuesday, Feb. 10. The Administration plans to scan these listed projects to see if money can be saved by cancelling contracts "no longer deemed essential."

• **Cancellations unlikely**—Contractors would have valid claims for damages in event of cancellation. A settlement would have to be negotiated by the military construction agency for each cancelled contract. These settlements would cost the government plenty. All the contracts are lump-sum jobs, and the contractors have based their future operations, procurement and organization employment on these going contracts. As another headache for any contractor who had his job taken away, the settlement undoubtedly would be subject to renegotiation.

For all these reasons, plus an even stronger one—that Congress didn't authorize the projects until convinced of their essentiality—there is small danger going jobs will be canceled.

Federal-aid highway projects apparently are outside the scope of the Eisenhower-Dodge order. Budget Director Joseph M. Dodge assured Charles M. Ziegler, Michigan highway commissioner and president of the American Association of State Highway Officials, that contract-lettings for federal-aid projects were to go ahead on schedule without hindrance or additional review by Washington. To the contrary, Dodge indicated that the Administration would like to see state highway departments move even faster in getting their federal-aid jobs under contract.

On the basis of that assurance, it seems unlikely that the President and his Budget Director intend to hold back on contract awards: for state and local hospitals, for schools, for community facilities and for local low-rent public housing.

A two-month slowdown in contract awards will cause no appreciable de-

(*Continued on page 22*)

Report seen final block to Incodel

Pennsylvania committee opposes four-state water compact—see action as blow to Delaware diversion plans

Pennsylvania appeared ready this week to throw a permanent block into plans for four-state development of Delaware River water supplies—a plan favored by New Jersey, New York and Delaware.

A special Pennsylvania Water Resources Committee concluded a more-than-year-long study at the behest of Gov. John S. Fine last week, and—not unexpectedly—unanimously rejected the Interstate Commission on Delaware Basin (Incodel) plan. The committee said the plan (ENR Jan. 15, p. 28) would put Pennsylvania at the mercy of the three other states. In place of the Incodel scheme, the group suggested that Pennsylvania go it alone with a state water authority, unless bilateral agreement with New Jersey could be evolved.

There was no comment immediately from the governor's office, but observers in Harrisburg said that the commission report undoubtedly would prove to be a death blow for the Incodel program. The governor's opposition will be contained in a brief message that will accompany the report when it is forwarded to the legislature—but the opinion was that Fine would not oppose a report from a group he had named himself.

The committee was headed by Albert M. Greenfield, Philadelphia leader, and included Thomas Buckley, former Philadelphia public works director, and Samuel S. Lewis, State Secretary of Forests and Waters. It was organized at the governor's request in 1951.

• **Let courts decide**—The committee advised the governor that it thought the state would be wise to leave the question of division of Delaware River water to the U.S. Supreme Court—rather than become a party to a compact "under which (the state's) reasonable requests could be denied by . . . any one of the three other states."

The Incodel Plan for integrated development of the Delaware is a $500-million scheme for its first phase alone. That phase would mean water supply for New York City and Northern New Jersey; river regulation for Pennsylvania and Delaware. In a later phase, the plan, as proposed, would develop water supply for Philadelphia.

The project has not been carried to the cost-allocation state, but it is assumed that states would contribute in proportion to benefits which they received.

As this issue went to press, the engineers' report—which went to the Greenfield Committee a few days before final recommendations were submitted to the governor—was unavailable. Consultants to the committee were: Gannett, Fleming, Corddry & Carpenter; Chester Engineers; Greely & Hansen.

Quotations from the engineers' report in the governor's committee report opposed large-scale diversions from the Delaware, and proposed four reservoir sites within Pennsylvania to meet Philadelphia's future needs plus a New Jersey-Pennsylvania reservoir on the Delaware at Wallpack Bend to control down-river trends.

Budget order holds awards . . .

cline in the rate of federal construction spending this year. The 1953 total of federal construction expenditures will still run about $5 billion or a little more.

Nearly all of this spending is scheduled for projects already under construction. Few—if any—of those jobs will be stopped.

• **Delay on Interior orders**—Other departments had not caught up with Defense at the first of the week in issuing orders to implement the White House-Budget directive. Interior Secretary Douglas McKay, for example, was just pulling his top-echelon staff together. He had no deputy or assistant secretaries on deck to translate the Dodge directive into orders for Reclamation, National Parks, Indian Affairs, Mines, Land Management and three power administrations (Bonneville, Southwestern and Southeastern). Fred G. Aandahl was expected to get out instructions for his bureaus as soon as the Senate confirmed him as Assistant Secretary.

Construction programs of the other departments are small in comparison with that of the Defense Department. Military construction will suffer the severest setback. In recent months, the three military services have been awarding construction contracts at a rate of $165 million to $220 million a month. They hoped to step up the rate to average $250 million or more per month for the first half of the current calendar year.

Holding down on military public works awards for two months may set back the obligation schedule by $400 million to $500 million. With advertising and bid openings going ahead as scheduled, contract awards for these delayed projects probably could be made quickly after the Secretary of Defense clears the jobs. In that event, total awards for the year may not be much reduced.

But the Defense Secretary may not clear all projects for which the services take bids. His Director of Installations, Frank R. Creedon, held over for the time being from the preceding administration, wrote two months ago to former Air Secretary Thomas K. Finletter, charging the Air Force with self-serving motives in attempting to triple its rate of contract awards in January, February and March of this year. The main purpose of the speed-up, Creedon said, was to justify additional Air Force money requests during the present session of Congress.

• **Brake on Air Force**—Acting Air Force Secretary R. L. Gilpatrick two weeks ago said the Air Force wanted to get contracts under construction for a much better reason: to make up time lost in nailing down sites and preparing plans and specifications. In the meantime, however, Creedon had written the Army Engineers not to be pressured into awarding airbase contracts faster than dictated by good engineering.

Economy ideas of the kind expressed by Creedon obviously weigh heavily with the new Secretary of Defense and his top aides. There is even a possibility that Creedon may be retained in his post (ENR Nov. 6, 1952, p. 21).

Either Creedon or his successor will have to advise Secretary Wilson on what new projects to approve. Congress last year set up the Director of Installations in the secretary's office specifically for that purpose, with others.

New water and power projects in doubt

Outlook dubious for starting Reclamation, Army Engineer jobs authorized for awards before June 30

Hold-up in contract awards under the government economy order of last week darkens the outlook for a number of new Reclamation and Army Engineer civil works projects.

Budget Director Dodge's order to government agencies casts doubt on the starting of some projects for which Congress has already voted money to permit contract awards before June 30—the end of the current fiscal year.

Two such projects not yet placed under contract are Reclamation jobs: the Savage Rapids Dam for the Grant's Pass project on the Rogue River, Ore., and the Solano irrigation project in California. The $3-million appropriation for starting Solano has been impounded pending congressional action.

• **Reclamation programs**—Construction agencies must take a closer look at new starts proposed in the Truman budget for fiscal 1954, to see if the proposed projects measure up to the new criteria. The proposed Reclamation budget included only three new starts for next year, all of them power plants: Deer Creek on the Provo River in Utah, American Falls on the Snake in Idaho, and the Roza power plant on the Yakima project in Washington.

Reclamation bids calls, scheduled for the January-March period, that may be affected include: Sly Park Dam in the Central Valley project, Calif.; Arrowrock Dam alterations, Boise project, Idaho; Missouri River diversion dam, Mont.; Bartley diversion dam and canals, Nebr.; Coachella distribution system, Calif.; Franklin Canal, Nebr.; Contra Costa distribution system, Calif.; lateral canal extension, Kendrick project, Wyo.; office building, McCook, Nebr.; government camp, Webster Dam site, Nebr.; seven power substations at various locations; dam for Solano project, Calif.; diversion dam and canal, Eden project, Wyo.; Crow Creek pumping station and canals, Mont.; six pumping plants and a canal, Columbia Basin project, Wash.; a canal and siphons, Yakima project, Wash.; canal, laterals and distribution system, Gila project, Ariz.; distribution systems for the All-American Canal and Central Valley projects, Calif.; canals and laterals for the Missouri River Basin, Columbia Basin, Eden, and Central Valley projects; embankment, wasteway, transmission line, power plant and substation contracts—along with others—throughout the 17 Western states.

• **Army Engineer plans**—Army Engineer projects are not so easily listed. Only two new starts were funded by Congress for fiscal 1953, but the schedule included about ten others that could be called new work.

Congress voted money to start two new Army Engineer projects in the current fiscal year ending June 30: $1 million to get work going on reconstruction of the Mississippi River lock at Keokuk, Iowa, and nearly $6 million for a starter on the $88-million Tuttle Creek reservoir in Kansas. Ground was broken for Tuttle Creek Dam last fall, in the same week with Table Rock Dam on the White River in Missouri (ENR Oct. 16, 1952, p. 25). Bids for Table Rock Dam are to be taken early this year.

Eisenhower's economy order will cause the Army Engineers to take another hard look at new projects, approved by the Budget Bureau, included in Truman's message for fiscal 1954. These requests include nearly $5 million to start the $105-million Ice Harbor lock and dam on the Snake River in Washington and about $2 million to begin work on the $17-million Toronto Reservoir, Verdigris River Basin, in Kansas. Also included are starts on three local flood-protection projects involving about $2 million and five additions to existing navigation projects, requiring about $5 million.

Assistant Interior Secretaries named

Former N. D. Governor Fred G. Aandahl and Orme Lewis, Phoenix lawyer, get posts; new McKay policies emerging

Two more top-drawer Interior Department posts were filled this week with the appointments of former North Dakota Governor Fred G. Aandahl and Orme Lewis, Phoenix, Ariz., lawyer, as assistant secretaries. Interior Secretary Douglas McKay also named Clarence A. Davis, Lincoln, Neb., attorney, as solicitor of the department.

To Aandahl went the Assistant Secretaryship for Water and Power—a position that has been vacant since William E. Warne left the Interior Department in 1951. Lewis' post covers land and Indian affairs.

As McKay was filling in the top brackets on his organization chart, outlines of the new Republican approach to Interior Department organization and functions also were emerging. Views expressed by McKay and the new members of his Interior team pointed to:

- Reorganization of the department along functional lines with clearly defined areas of responsibility and with emphasis on economy.
- Broader participation by state and local interests in waterway development and a long-range move toward disposing of lands now held by the federal government.

• Tudor gets free hand—McKay let it be known that he was going to give a free hand to newly appointed Undersecretary Ralph A. Tudor, San Francisco consulting engineer, and former chief engineer of the Bay Toll Crossings Division of the California Public Works Department, to reshuffle Interior's organization with an eye to efficiency and economy. By delegating full administrative functions to Tudor, McKay hopes to be free to concentrate on policy matters and to handle the public duties that go with the cabinet post.

It also has been made clear that the assistant secretaries are to be "active bosses" of the agencies for which they are responsible. McKay is emphasizing this point as an expression of his opposition to what he has described as the "short-circuiting of authority" that characterized the previous administration.

Aandahl, with jurisdiction over the Bureau of Reclamation, Bonneville Power Administration, and the Southeastern and Southwestern Power Administrations, will direct the major irrigation and power activities of the department. The Truman budget provided more than $150 million for construction in fiscal 1954 for the four agencies under Aandahl's supervision.

FRED G. AANDAHL to direct water and power activities

During his governorship of North Dakota, Aandahl served as chairman of the Missouri Basin Interagency Committee tossed Aandahl some $64 water development and conservation matters for many years. His third term as governor was followed by service in the last session of Congress.

• Aandahl gives views—Before unanimously approving his confirmation for the appointment, the Senate Interior Committee tossed Aandahl some $64 questions. Gist of three of his replies indicated these views of interest to construction men:

- It would be "very well" to consider turning over civil works projects to local bodies once the federal investment has been repaid.
- While local ownership and operation of waterway projects should be encouraged, there is often a broader interest which requires federal participation.
- As long as the federal government continues to appropriate money to a project, it must continue to have an interest in its operation.

• Lewis gives up stock—In accepting his Interior Department position, Lewis resigned as a director of the Arizona Public Services Co. The Phoenix lawyer and civil leader also disposed of his 5,000 shares of stock in the company, thus removing what threatened to be a stumbling block to confirmation.

Davis, who will replace Martin White as Interior Department solicitor, is a close friend of Senator Hugh Butler, chairman of the committee which questioned the Interior appointees.

An interesting sidelight on Davis' testimony before the committee came when he was asked his views on a Missouri Valley Authority. He said he had been "pretty lukewarm on superimposing a federal authority on the Missouri Basin."

Senator Murray, long-time advocate of an MVA, asked Davis if he believed that in development of water resources of the Missouri Basin some simple authority located in the basin would be proper to develop it. Davis said he agreed.

Aandahl said in regard to that issue that he was "opposed to an MVA type of thinking as governor."

Chief Joseph costs found lower than estimate

Chief Joseph Dam on the upper Columbia River not only will be producing power earlier than had been anticipated but will cost less, the Corps of Engineers has reported.

The first three 64,000-kw units now are scheduled to go into operation Sept. 1, 1955, three months earlier than the original schedule, according to Col. N. A. Matthias, district engineer at Seattle. Sixteen generators are to be installed by the end of 1958.

Ultimate installation of 27 units, with a total rating of 1,728,000 kw, would make the plant second in size to Grand Coulee among the world's power plants.

Estimated cost of the project has been reduced $12.5 million to $193,250,000, Col. Matthias revealed. Last year saw the placing of 430,000 cu yd of concrete in the main dam and 109,000 cu yd in the powerhouse structure.

Golden Gate inflation

To replace the Golden Gate Bridge from the San Francisco abutment to the Marin County abutment would cost $79,441,000, compared to its original cost of $24,471,237.

The appraisal, made by Clifford E. Paine, consulting engineer, was ordered by the bridge directors, who want to increase insurance on the span, now limited to $13.6 million.

State toll-highway proposals mount

Several legislatures acting on survey reports, others plan studies; many specific projects asked

The expected bumper crop of toll-road legislative proposals is developing in state capitals throughout the country. A variety of bills, ranging from survey authorizations to specific projects, have been filed within the past few days and many more are due.

Measures proposing creation of state authorities for the purpose of financing and constructing toll roads have been introduced in California, Connecticut, Kansas, Missouri and Texas. Toll-road enabling acts will be proposed in Nebraska, Missouri and Tennessee.

The Delaware State Highway Commission has recommended legislation permitting construction of a toll road connecting the Delaware Memorial Bridge with Chesapeake Bay Bridge, with Warwick, Md., as the Delaware-Maryland terminus.

Pending in the Connecticut legislature is a bill authorizing issuance of $135 million in revenue bonds to finance construction of the Fairfield County Throughway. Another proposal is for an all-purpose toll highway across eastern Connecticut from New York to Rhode Island with a branch north from New London.

Unique among the toll-financing proposals has been one introduced in Connecticut that would authorize toll collections on paid-up highways as a means of financing other road projects (ENR Jan. 15, p. 24).

• **Texas has big ideas**—In New Hampshire, the legislature will consider a report by the State Department of Public Works on the possibilities of a $40-million toll program involving a 40-mi limited-access highway from the Massachusetts border to Concord and extension of the present New Hampshire Turnpike from Portsmouth to Rochester.

The Rhode Island legislature likewise will discuss the findings of a toll-road survey. Meantime, a measure has been filed that proposes a dual-toll highway from the Connecticut line to the Massachusetts border.

Texas legislators will have several specific toll projects to study, along with Gov. Shivers request for a state toll-road authority bill. One proposal calls for creation of a Dallas-Fort Worth turnpike authority to finance a $31-million toll highway between the two cities. A recently chartered Sam Houston Turnpike Corp. wants to construct a $150-million, 276-mi toll highway from the Dallas-Fort Worth area to San Antonio.

A 70-mi toll superhighway from Tacoma to Everett, passing through Seattle, has been recommended to the Washington state legislature by the State Highway Commission and a legislative interim committee. This proposal also calls for creation of a state toll-road authority. Governor Langlie, however, has indicated preference for expanding the state toll-bridge authority to handle toll-road programs.

In Indiana, incidentally, Governor Craig has advocated legislation transfering the State Toll-Road Commission to the State Highway Department. He also would merge the State Toll-Bridge Commission and the State Board of Public Harbors and Terminals with the Highway Department.

Several states plan engineering and traffic surveys to determine the advisability of toll-highway projects. Such resolutions are pending in the legislatures of Iowa and Minnesota. Illinois is expected to adopt the same course and Alabama's legislature, which convenes in May, will be asked by an interim study committee to appropriate survey funds.

One state—Georgia—actually will consider repeal of a 1952 law authorizing a toll superhighway between Cartersville and the Tennessee line. The project was shelved last year, following an adverse report on toll-receipt potential by two engineer consulting firms.

Aside from the many legislative proposals for initiating toll-road agencies and projects, there are countless measures pending in states where toll-highway construction is in progress or where existing laws enable it to be undertaken.

• **Caution sounded**—The mounting interest in toll-road possibilities among state legislators tended to underscore a note of caution voiced by New York state's Public Works Department Superintendent Bertram D. Tallamy.

Addressing the recent annual meeting of the state's County Highway Superintendents Association, Tallamy urged a new system of federal highway aid as the only means to coordinate the growing network of toll roads now being built in many states.

"It may very well be that some day the most important system of highways in the nation may be designed for different loads in each state, and for different speeds, different types of signs and with different access roads," he declared. Noting that federal funds at present cannot be used for toll roads, Tallamy declared that Congress should re-examine the whole question of federal aid to state highway systems in view of the changed circumstances.

California rainmaking experiments to continue

California's rainmaking experiments were challenged as unworthy of further appropriations at a stormy legislative committee hearing in Sacramento last week, but legislators agreed to budget $40,000 for continued research instead of a requested $60,000.

The State Division of Water Resources, which has been investigating the effects of cloud seeding, argued that additional funds are necessary, not only to evaluate past rainmaking activities but to conduct new controlled experiments.

State hydraulic engineers want to select a 100-sq mi area and carefully spot within it a number of rain gages. At every storm opportunity the decision would be made, on a random basis, whether or not to seed the clouds. Rainfall catches would be documented for all storms and a comparison made between seeded and unseeded storms.

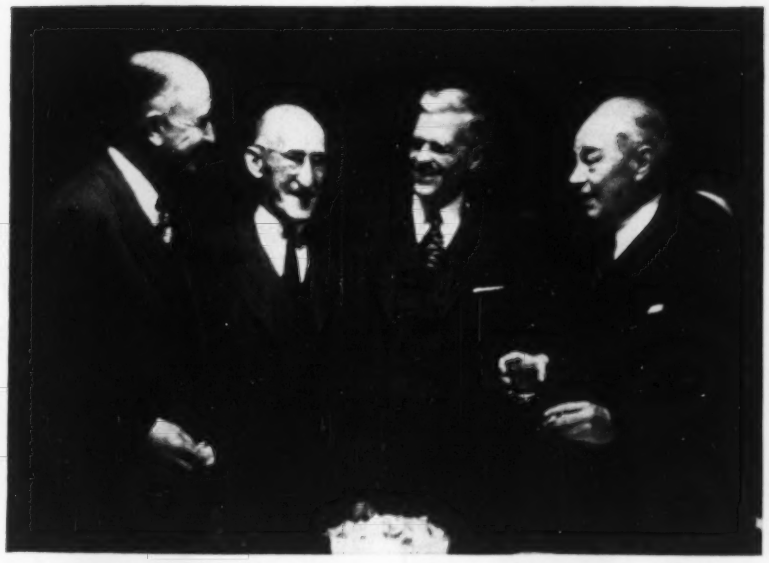
New legislation proposed for N. C. public works

Legislation permitting reorganization of the North Carolina Highway and Public Works Commission was introduced last week.

The measure will give Gov. William B. Umstead power to name a comin an increase in number of the commissioners from 10 to 15 and a redistricting of the state into 15 instead of 10 divisions.

Acid mine wastes to end

A solution may be in the offing for a hitherto unsolved water pollution problem, acid mine drainage. Sulphuric acid issuing from soft coal mines when water and air get at them costs millions yearly in water treatment and in corrosion damage. Researchers at Johns Hopkins University, working for the Interstate Commission on the Potomac River Basin, have a "chemical inhibitor" claimed to prevent the undesirable reaction in laboratory experiments. The big test now will be to see if it will work economically in the mines. There will be more to be told when patent application has been filed.



ALL-AMERICAN TEAM—Leading U. S. constructors relax before the Moles award dinner: (l. to r.) 1952 award winner Stephen D. Bechtel, of San Francisco; Edward P. Palmer and Peter Kiewit, 1953 winners; David Bonner, Moles president and vice-pres. of Frederick Snare, Inc., worldwide construction firm. (ENR photo.)

Moles honor Peter Kiewit, E. P. Palmer

Omaha contractor and former AGC president receive annual awards; T. K. Glennan addresses meeting

Omaha contractor Peter Kiewit and Edwad P. Palmer, former president of the Associated General Contractors of America, received the Moles annual awards for service to construction last week in New York.

Presentations were made before a group of 1,000 heavy construction men, who also heard T. Kieth Glennan say that the time has come to let private industry put its ingenuity and incentives to work on the peaceable uses of atomic energy. Glennan, a former member of the Atomic Energy Commission, is president of Case Institute of Technology in Cleveland.

Stating that the government's investment in atomic energy so far amounts to $12 billion, (This includes all phases of atomic energy activity: tests like the famous one at Bikini as well as the investment in physical plant), Glennan said that the United States now is at a three-pronged fork in the atomic energy road.

Weapons need is limited. One choice is to restrict atomic energy to military use by building up the stockpile of atomic weapons as fast as possible for an infinite period of time. This is unnecessary, Glennan said, because there is a definite limit to the number of tactical and strategic atomic weapons targets throughout the world.

A second choice is to give top priority to military uses, and almost as much priority to peaceable uses, to be administered as a government monopoly. The third choice is the same as the second, with the important exception that private enterprise would own a substantial portion of the peaceable uses of atomic energy.

Glennan favors the third choice, advising industry to seek the release of fissionable materials for use in private enterprise; to obtain patent rights, particularly to methods developed by industry's own people; and to seek the release of secrets, particularly in the atomic power field, that may no longer affect security.

The Moles, a New York organization of tunneling and heavy construction men, called Kiewit "constructor extraordinary (with) rare vision, enterprise and superb skill, notably in the fields of public service and world-wide heavy construction." His was the nonmember award. Important projects currently under construction by the Kiewit firm are the $1.2-billion AEC plant at Portsmouth, Ohio, and a giant airbase being built at Thule, Greenland.

Member award winner Palmer was cited: ". . . in recognition of his outstanding accomplishments and his supreme ability, notably in the fields of pneumatic foundations, tunnels and industrial relations." He has had a part in much of the compressed-air work around New York in the past 40 years, since 1929 as a principal in Senior & Palmer, Inc. For many years, and partly in connection with his leadership in the Associated General Contractors, he has served on national labor policy-making boards in the construction industry.

The Moles awards originated in 1941. They have gone to such men as former President Herbert Hoover; Robert Moses, New York City construction coordinator; William McMenimen, president of Raymond Concrete Pile Co.; Adm. Ben Moreell; R. E. Dougherty, former president of the American Society of Civil Engineers; Gen. Brehon Somervell; Harry Morrison, president of Morrison-Knudsen Const. Co., Boise, Idaho; and Stephen Bechtel, president of Bechtel Constructors, San Francisco. The awards presented at an annual award dinner are bronze plaques, supplemented by parchment scrolls.

Prestressed drydock study initiated

The Navy has awarded a $300,000 research contract to Engineers, Inc., Alexandria, Va., to develop design criteria for use of prestressed concrete in floating drydock construction.

The project will further a study of methods for building concrete drydocks being conducted by Navy civil engineers. The study was announced as an economy move a year ago by Rear Admiral Joseph F. Jelley, Chief of the Navy Bureau of Yards and Docks.

The aim of the Navy is to construct a lighter concrete floating drydock of increased capacity. Thirteen concrete floating drydocks built by the Navy during World War II proved cumbersome.

Navy engineers have in mind a concrete drydock that will provide greater maneuverability. Such a drydock design would be particularly useful in an emergency. It would require less steel and fewer scarce workers such as shipbuilders.

Nation's capital loses noted 'lady engineer'

Construction and contracting circles lost an outstanding personality by the recent death of Mrs. Charles H. Tompkins, senior vice-president and treasurer of the Charles H. Tompkins Co., in Washington, D. C.

Known as "the lady engineer," Mrs. Tompkins directed the office organization of the District of Columbia's largest engineering construction firm both at headquarters and in all project offices throughout the country.

OPENING OF A WAREHOUSE in Hellgate Yard of the New York, New Haven & Hartford Railroad in the Borough of The Bronx, New York City, was marked by a . . .

PARTY, which included a private train, strolling musicians roaming aisles and . . .

Construction vs. dividends

New Haven Railroad stock fight over capital improvements may decide other roads' programs

The New York, New Haven & Hartford Railroad may be starting a trend which, if followed by other railroads, will mean a lot of work for the construction industry.

Briefly, the scheme entails increasing tonnage shipped on the railroad by providing shippers, distributors and some industries with low-rent facilities within the yards of the railroad. Other railroads are watching the experiment with great interest. Recently an official of the Pennsylvania Railroad said: " Personally, I wish we had a similar program."

To sell the idea, the New Haven recently held a party for 500 industry VIPs at the opening of its new $2.5-million freight distribution center in the Borough of The Bronx in New York City.

The party was a success but the future of the plan remains an open question.

• **Battleground**—An analysis of the situation requires some background on the New Haven line.

A stockholders' battle is on for control of the New Haven Railroad.

The issue: construction vs. dividends.

At stake: completion of a five-year, $139-million capital improvements program.

The order of battle: on one side, Frederic C. Dumaine, Jr., who inherited control of the road when his father died in 1951. On the other side, a group led by Patrick McGinnis, New York railroad securities expert.

D-Day: the annual meeting, probably April 8.

McGinnis contends that the New Haven, now more than five years out of bankruptcy and showing good earnings, should return more dividends to stockholders.

Dumaine's answer to the McGinnis challenge is: "I'm going to keep running the railroad."

• **Engineering work**—Involved in the difference of opinion between Dumaine and McGinnis are projects proposed and started by Dumaine—such projects as yard and terminal improvement and simplification, curve reduction, track and roadbed upgrading.

The New Haven is spending $3 million for new ballast and heavier rail along 2,000 mi of track.

To keep customers using its services and to bring in new customers the road is installing new marine facilities at the New York City terminus, and building new warehouses totaling $17.5 million in New York City and Boston. In general, the management proposed to substitute low-cost for high-cost facilities, where possible.

Typical of the New Haven's activities is a multi-million dollar scheme for relocating the railroad's roadbed in downtown Providence, R. I.

The present roadbed would be freed for use by Rhode Island as a site for its New Central freeway. The railroad's share of the $12-million estimated cost has been put by Dumaine at $3 million. The project would straighten a curve, cut 10 min off the New York-Boston running time. In addition, it would realize cash from liquidation of station and downtown yard facilities, all high-value real estate.

• **Fine but**—McGinnis' view of this and other projects is: fine, perhaps, but not necessary now. Other roads have made substantial capital improvements but they have paid stockholders on their investments, too. He recommends: Review, the projects not already committed, spread necessary ones over a longer period of time.

The Dumaine management's answer is: We stand on our record. There are more important things just now than higher dividends, things that will increase the real value of the railroad and pay off eventually in greater earning power as well as price appreciation for stockholders' shares.

And, the Dumaine group says, improvement has resulted in lower operating cost and increased revenue.

•

• **Tonnage building**—One of the keystones of the program is the scheme for increasing tonnage by providing low-rent warehousing.

The low rent does not mean that the warehouses do not pay for themselves, cautioned George T. Carmichael, vice-president of the line. We are building low-cost warehousing and favoring distributors and lessees who will originate a good volume of freight for the line, but even as a business proposition, the warehouses pay.

The railroad has applications for over 3,000,000 sq ft of warehousing

FLOWERS for the ladies, most of them wives of transportation industry leaders.

A RECEPTION held in the $2.5-million warehouse which was the first of a program of such structures that might total $17.5 million.

space for its at-present-planned 1,000,000 sq ft of warehousing in The Bronx.

• **Warehousing**—The Bronx warehouse is typical of how the railroad goes about building these centers:

For its plans it went to Emil Praeger of Praeger & McGuire, designer of Pier 57 in New York City. Working closely with the New Haven's engineering department, Praeger came up with plans for a flat-roof building of 286,000 sq ft and containing about 3,500,000 cu ft of storage space.

Contracts were let to P. Kretzer & Son of Flushing, N. Y., industrial builders who completed the structure in less than nine months.

"The costs," said Bill Kretzer, president of the firm, "averaged about $7 per sq ft."

The building program—now well under way with two more warehouses ready to go—was financed by the New Haven itself. Railroad officials will try to get regular 25-year first mortgages for the facilities when built.

It is this point that is being watched by the other railroads around the country. Many of them are prepared to lease land to distributors and shippers; some will even enter into a contract to build a facility for a specific concern, but this semi-speculative building of warehousing (or industrial facilities) is something new.

The land that is required for the projects is found right in the railroad's own unused right-of-way areas, usually in the bulky freight-classification yards. One of the New Haven's methods of freeing land within the yards is to eliminate the electric lines and towers and switch to diesel engines within the metropolitan areas.

SERIOUS STUDY was given to all phases of the program by visitors and friends.

SMILING HOSTS: W. Kretzer (left) builder; "Buck" Dumaine, president.

VIANDS FOR VIP'S completed the introduction of the freight-organization and land-use plan. Next step: convincing the hungry stockholders.

Sanitary engineers group proposed

500 invited to become charter members of professional body promoted by MIT professor

A proposal to form an American Institute of Sanitary Engineers has been mailed to 500 selected engineers invited to become charter members. Signer of the proposal and chief proponent of this institute-in-embryo is Rolf Eliassen, professor of sanitary engineering at MIT.

Stated objective of the proposed organization is "advancement of the sanitary engineering profession by the promotion of the professional, political, economic, and social stature—and hence the welfare—of professional sanitary engineers." It is claimed not to be concerned to any significant degree with technical aspects of the profession.

A canvass of about one hundred sanitary engineers for their ideas on need for such an organization resulted in formation of a founders committee of 60 members. Professor Eliassen is temporary chairman. Other temporary officers include: John E. Kiker of the University of Florida, vice-president; Harvey F. Ludwig of U. S. Public Health Service, secretary; Lt. Col. A. F. Meyer, Jr., Air Force sanitary engineer, treasurer.

The 500 selected engineers now being circularized are asked if they would each contribute $10 to an organization fund.

In the meantime, proponents of the AISE have put the question of the proposed new organization before the Joint Committee for the Advancement of Sanitary Engineering, a 15-member group with representation from the American Society of Civil Engineers, the American Water Works Assn., the Federation of Sewage and Industrial Wastes Assns., American Public Health Assn. and the American Society for Engineering Education.

Organizers of the new group disclaim any intent to compete with existing groups serving the interests of U. S. sanitary engineers. Instead they propose to provide a "home," a "hub," a "fighting front" for professional sanitary engineers.

Membership requirements would include an academic degree, eight years' experience in sanitary engineering, and active registration as a professional engineer in some state. One listed objective of the new institute is the registration of professional sanitary engineers and promotion of the strength of the National Society of Professional Engineers. The proposal offers as an ideal an arrangement whereby all engineering societies would be organized within an NSPE framework.

The proposed AISE would publish a quarterly bulletin dealing only with "professional aspects" of interest to sanitary engineers. It would hold meetings in conjunction with regular national meetings of existing groups. Regional and state chapter meetings also are planned.

It is not intended to integrate professionals of allied fields—chemists, biologists, etc. Members would be relatively few; but membership, in the opinion of the proponents, would be of vital importance especially in civil service rating.

Says Professor Eliassen: "We are trying to establish sanitary engineering on a professional basis, as a separate and well-recognized profession."

Ohio claims raw deal on atomic plant roads

Ohio's Pike County atomic energy plant is going to have a large traffic problem if the U. S. government doesn't appropriate funds for highway financing, which the Ohio Chamber of Commerce believes the government should pay in full.

Samuel O. Linzell, Ohio state highway director, told a lively meeting of Ohio congressmen in Washington that by Decoration Day of 1954 employment at the Pike County plant is expected to reach 29,000. "It's going to be like turning a Big Ten football crowd into U. S. 23 (the main highway past the atom plant) every afternoon. And Route 23 is not as wide as this room," he said.

Rep. William E. Hess said that the federal government should pay all of the $25 million needed for highway improvement in and around the Atomic Energy Commission's billion-dollar project. William Saxbe, speaker of the Ohio house of representatives, summed up the federal government's attitude this way: "They leave a baby on our doorstep and then try to make us believe we are its father."

Under an agreement reached last fall between the Bureau of Public Roads and the Ohio highway department, the federal government would contribute $10 million as access-road money and another $7 million as federal matching money.

Ohio would then match the $7 million to make up the total funds needed for road work. But the federal government wanted the state to advance all the money for construction now, and the $10 million access money has not been voted yet by Congress, said Mr. Linzell.

Although he once agreed to this plan, Linzell said, he soon discovered that it would bring all highway building in Ohio to a standstill and that the state would no longer be a safe place in which to live. He recently gave the federal government notice that Ohio would put up $2 million and no more.

The Ohio state highway department has spent about $400,000 in the atomic-plant area and has pledged another $1.6 million.

Saxbe said that the Ohio legislature will take no action on a bill to loan $4 million from state surplus until Congress acts on Pike County highway appropriations. This latest stand probably dooms Gov. Frank Lausche's $12-million proposed loan from state surplus (ENR Feb. 5, 1953, p. 26) from which state representatives have already decided to lop off $7.5 million.

Despite the Ohio's group's resolution, the U. S. Deputy Commissioner of Public Roads, H. E. Hilts said, "We determined what we thought to be an equitable apportionment of cost. . . ."

Rep. Wayne L. Hayes advised the delegation to tell the AEC and the Public Roads Bureau: "If you want roads built down there, build them yourself."

Speaker Saxbe said Ohio is entitled to more money from federal automotive revenues than it gets because about 75% of the trans-continental motor vehicle traffic crosses the state and the federal government collected about $50 million of such taxes in Ohio in one year and returned only $19.5 million to the state.

News briefs . . .

• **Uncle to pay**—Clarksville, Va., won a legal victory last week when the U. S. Supreme Court refused to review a lower-court ruling favoring the town's compensation claim for a sewage-treatment plant. The plant would have cost the town $150,000, according to its attorney, who says that government engineers had agreed that the federal government would build the plant at no cost to Clarksville if the town won the case.

• **Dallas floodway**—The Dallas floodway project, which will involve strengthening about 26 mi of levees along Elm Fork and West Fork of the Trinity River in the heart of the city, will begin this month. Corps of Engineers will supervise the $8-million project, designed to bolster flood protection of a 10,500-acre business and residential area.

Leaders cheer end of wage controls

Construction-industry spokesmen and union leaders agree that decontrol was due and industry ready

President Eisenhower's decontrol of salary and wage controls last week met with the approval of both construction-industry and union spokesmen.

Neither side would predict smooth sailing for negotiators of contracts for the future. But both sides believed that controls had artificially hampered agreements.

Here is the view of a typical industry spokesman:

• **No wage pressure problems**—The lifting of wage controls won't raise any wage pressure problems in the construction industry, in the opinion of James D. Marshall, assistant managing director of the Associated General Contractors, who has been a contractor member of the Construction Industry Stabilization Commission.

Marshall doesn't believe there will be more—or as much—trouble over wage increases as there would be if controls still existed. Building-trades unions often have used government wage ceilings as the starting point for wage demands, he pointed out. Now, contractors and unions will have to bargain in the light of economic facts—with no specific target to shoot for, or to better, Marshall told ENGINEERING NEWS-RECORD.

"Union leaders have felt that unless they got the full limit of the government's permissive wage increase—or better—they weren't doing a good job for their members," Marshall said.

He goes along "100%" with wage decontrol, asserting that controls were losing the respect of the public and the quicker they were lifted the better.

It was important to avoid disrespect for controls "because we may need them again some day," Marshall said.

• **Good news**—Typical of the union-spokesmen's reaction was that of Daniel W. Tracy, president of the AFL electrical workers. "Good news," he said, when he heard of the decontrol order.

Tracy said that while there might be some temporary clashes between labor and the management over the negotiation of some contracts, the situation should be smoothed out within 30 to 40 days.

George M. Harrison, president of the Brotherhood of Railway Clerks, said the controls program had become "a fraud and a farce" and said it was high time the controls were wiped out.

• **Note of warning**—A few days before President Eisenhower issued his order for decontrol of wages and salaries, AFL president Meany had warned that in many cases such decontrol would mean reopening of wage negotiations.

He said many contracts had been signed with the understanding that they must be approved by the Wage Stabilization Board before they were effective. He charged that management had signed the contracts with "tongue in cheek," knowing the agreements would not be approved.

"This type of contract would be reopened immediately for negotiations," Meany said, "if wage controls end."

"And there were a number of contracts, made in good faith on the part of the union and management, which were not approved by the stabilization board," he added. These also would be negotiated again, he said.

• **Last days of CISC**—Some 150 applications for approval of wage adjustments in construction were pending when President Eisenhower removed wages and salaries from control for the first time since January 26, 1951. The 150 adjustments may be put into effect if approved by CISC now. This covers increases that were expressly contingent on CISC approval.

Just before Eisenhower lifted the lid, CISC hurriedly acted on another 150 applications that involved retroactive increases, so that there would be no legal complications. This turned out to be unnecessary because the White House order gave retroactive approval.

Where CISC has modified a proposed increase, neither side—if a labor contract is involved—has any legal right to insist on restoring the cut, although there is nothing to prevent this being done by agreement through collective bargaining.

Report labels overtime-pay violations chief cause of construction penalties

Violations of the overtime-pay provisions of the Fair Labor Standards act were the chief cause last year of back-wage liabilities for firms in the construction industry, according to the 1952 report of the U. S. Labor Department's Wage and Hour and Public Contracts Divisions.

The report shows that employers in the industry paid $484,879 in back wages to 6,918 employees, as a result of the divisions' activities. This sum does not include amounts awarded to employees who sued in court for back pay and liquidated damages.

Of the 1,323 establishments investigated by the divisions during 1952, 59% were found in violation of the overtime-pay requirement and 18% had failed to pay the statutory minimum wage. The divisions found violations of the act's child-labor provisions in 3% of the investigated cases.

This record—and the fact that 62% of the investigated establishments had violated one or more of these basic provisions of the federal wage and hour law—should not be considered representative of compliance by the construction industry as a whole, however. Efforts are concentrated where complaints have been made or general information indicates that violations will probably be found.

Most violations were due to mistaken ideas about the wage and hour law's applicability to some of the establishment's employees. Complete understanding on the status of every employee would eliminate the chance of having to make unexpected back-wage payments, according to administrator W. R. McComb.

• **Provisions**—The act's provisions apply to employees engaged in interstate commerce or in the production of goods for interstate commerce. Unless they come within a specific exemption, such employees are entitled to a minimum wage of 75 cents an hour and not less than time and one-half their regular rate of pay for all hours worked in excess of a 40 hr work-week. The child-labor provisions set a minimum age of 16 years for employment in general and 18 years for jobs which the Secretary of Labor has declared hazardous.

PLAQUE FOR SAFETY RECORD being presented to Peter Kiewit (second from right) by S. Bruce Black, Liberty Mutual Co. (second from left). Brig. Gen. Robert Lovett, Corps of Engineers (left) and Lt. Gen. Hubert Harmon, USAF (right), join in the congratulations.

Thule construction sets safety record

Accident frequency is 75% lower than in similar work as performed in the continental United States

The safety record achieved by the North Atlantic Constructors and the 5,000 workmen who built the Thule Air Force Base in northern Greenland saved the government "at least $830,000, possibly $1 million," in returned premiums.

Despite adverse climatic conditions, Thule was finished with an accident-frequency record 75% better than the average for the same type of work in the U. S., according to S. Bruce Black, president of Liberty Mutual Insurance Co. Black presented a plaque to Peter Kiewit, representing Peter Kiewit Sons' Co. and Condor-Cunningham, Inc., both of Omaha, Neb., together with S. J. Groves & Sons, Inc., and the Al Johnson Construction Co., both of Minneapolis, Minn., which formed the NAC.

During 1952 the 5,000 heavy-construction workers completed 8,600,000 man hours, almost half in Arctic darkness, to rush the base to completion.

Typical of the remarkable safety achievement, said Black, was the record of the riggers employed on the job. Raising sheet steel for fuel tanks in winds of gale velocity, they completed 60,687 man hours with only one lost-time accident, which kept only one man off the job only one day.

A steel tower almost as high as the Empire State Building was erected in seven weeks with only one minor accident, although the men were exposed to winds as high as 125 mph and sometimes separated from ground visibility by clouds. One hundred thousand tons of dynamite were exploded without a serious accident.

"This remarkable saving of life and property resulted from cooperation and interest on the part of the builders in the safety methods of the insurance loss-prevention engineers," Black said. "It proves that pre-planning can reduce accident potentials, even under the worst weather conditions."

• **Pre-planning**—When Thule was authorized by the Air Force, Liberty Mutual loss-prevention engineers were assigned to the staging areas in Minnesota where the laborers were recruited and trained for work in a "sub-normal winter clime."

In this period, the Liberty engineers trained the supervisory personnel in safety procedures. With the assistance of the Quartermaster Corps, they also developed special work clothes for the Arctic climate.

• **Safety and efficiency**—Brig. Gen. Lovett, who is in charge of construction in Bermuda, the Azores, Iceland, Newfoundland, and Labrador, as well as in Greenland, stressed that "safety is an inseparable component of efficiency."

Speaking of "counter-bases" being built by "slave labor," Lt. General Harmon, USAF, said: "Their engineers regard human life as an asset only as long as it can produce. For safety codes, they substitute the whip and the gun. In Thule, however, we have free American labor, transhipped voluntarily to Greenland, watched over by expert safety engineers and safety conscious foremen."

District 50 appeals case lost to construction firm

The United Mine Workers last week appealed to the Virginia State Supreme Court of Appeals to overthrow a $275,000 judgment which it lost in 1951.

The 1951 case was won against UMW and its catch-all District 50 by Laburnum Construction Corp. of Richmond, Va., in a lower court. Laburnum won the case when the court decided that UMW District 50 had interfered with the construction company's projects in Breathitt County, Ky.

As a result of the interference, the lower court found, Laburnum had lost its contracts by cancellation.

The union, in its appeal, cited 148 assignments of error. For one thing, they said, the lower court had no authority to determine the issues because of the Taft-Hartley law.

Moreover, it contends that the damages resulted from "peaceful picketing of a lawful strike," and hence was not actionable.

If the appeals court will not overturn the judgment of the lower court, the union asked that it be granted a new trial.

Temporary injunction halts picketing at air base

Circuit Judge E. Frank Langford last week granted a temporary injunction restraining three labor unions from picketing two contractors who were using partly non-union labor at Stewart Air Base, near Nashville, Tenn.

The picketing, said three contractors who were engaged in work on the air base, has halted many other union workers and this has resulted in a work stoppage.

The injunction was issued against officials of the cement masons, the carpenters, the laborers and the members of the three unions.

SKEW UNDERPASS of Brooklyn sewer at depressed section of Long Island Railroad called for carrying railroad bridge section on sewer walls.

SEWER WALLS were built as series of underpinning pits. Underpinning worker looks out from his pit. Note that berm was left to support soil under railroad.

Trunk sewer built under a railroad

Charles B. Spencer
President, Spencer, White and Prentis, Inc.
New York, N. Y.

FITTING new underground structures into a complex of existing facilities called forth a variety of the contractor's tricks of the trade on a sewer contract in Brooklyn, N. Y.

Perhaps the most difficult part of the job—a trunk sewer serving the new Owl's Head treatment plant (ENR Sept. 28, 1950, p. 44)—involved passing under a subway and an open cut section of the Long Island Railroad. A novel use of underpinning methods, together with conventional sheeting and bracing, did the job with little interference to the two operations.

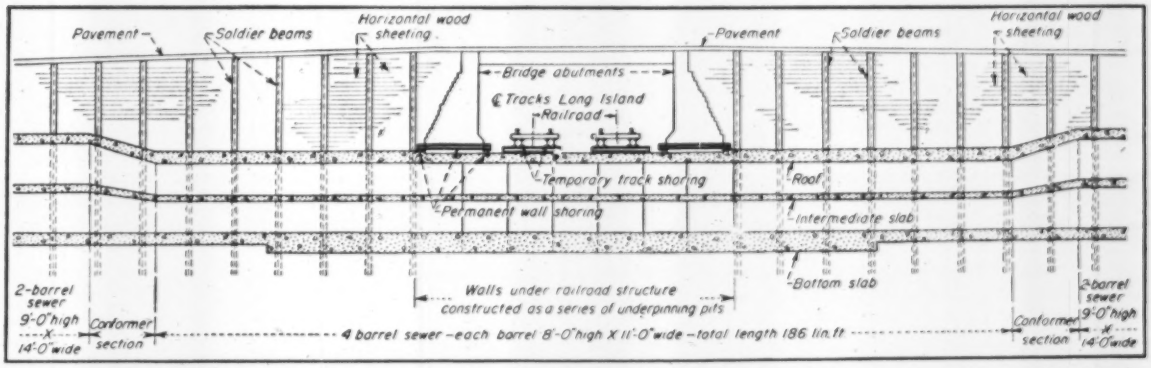
Since the jobs were similar, a description of the LIRR job only is given.

The sewer's normal section is of reinforced concrete, consisting of two barrels, 9 ft high x 14 ft wide, one over the other. The street in which the sewer is constructed crosses the Long Island right-of-way on a reinforced concrete bridge. The bridge abutments, parallel to the railroad tracks, are at an angle of 45 deg. to the line of the sewer.

Where the sewer passed beneath the railroad, the design called for splitting the sewer on a vertical plane and increasing the width. This resulted in a four-barrel sewer, each barrel 8 ft high by 11 ft wide. The change served the double purpose of providing a center line of support, and permitting lowering of the roof to clear the bridge abutments without decreasing the volume of the sewer. The bottom of the sewer was 45 ft below the street, and the borings showed that the material down to that level was a coarse sand, gravel and boulders, increasing in fineness as subgrade was reached.

The underpass and the transition section from 2 to 4 barrels at either side were constructed as a single operation. Construction was started on the transition sections so as to expose the full depth of the abutments, and to give access to the portion of the work beneath the railroad. A soldier beam-and-sheeting method, similar to that used in the rest of the sewer construction, was employed for this part of the work. As excavation continued, sheeting supported by the flanges of the driven beams was installed progressively. The bracing design prepared by the contractor and approved by the city provided for horizontal steel wales 14-in H 89 lb at depths of 8 ft, 19½ ft and 31 ft below the street. Steel braces engaging each line of wales consisted of 12-in H 53 lb, at 11-ft centers.

• **Underpinning pits used**—Excavation was continued in both transition sec-



LONGITUDINAL CROSS SECTION of underpass shows trench sheeting method and the shoring for transferring track and bridge loads to sewer walls.

tions nearly to subgrade, leaving berms to protect the bridge abutments. Working from these berms the two side walls and the center wall of the sewer were constructed as a series of underpinning pits, keys and dowels being installed to provide the necessary continuity of the structure. As the depth of the excavation in the pits increased, the material became finer, and since it was quite dry, the bottom was continuously dampened so as to minimize loss of ground. As an added precaution, louvres were left between the sheets, so as to permit stock ramming as each sheet was placed. By these methods and the use of extreme care, the pits were installed successfully without appreciable loss of ground.

• **Track-load transfer**—However, before any excavation was done below the tracks, it was necessary to make provision for carrying the track loads over the excavation. The intensity of traffic on the railroad was much less than had been the case in the sewer construction below the subway, but the track loadings were much heavier. In the case of the subway the shoring of the tracks was included in the sewer contract, but the Long Island Railroad did the work itself for the city's account, using materials supplied by the contractor. This resulted in a divided responsibility, but enabled the railroad to coordinate the shoring with its train movements.

In both operations the shoring technique was the same, that is, installing beams under each rail, temporarily carrying the loads to timber mats on either side of the sewer wall. As each wall was completed the loadings were transferred from the mats to the wall, with the beams spanning between. Upon final completion the beams were removed and the track loadings carried directly, through rock ballast upon the roof of the sewer structure.

In constructing the walls, horizontal keys were provided to support the bottom, the intermediate slab and the roof. All parts of the structure were heavily reinforced and the placing of the reinforcing steel in the pits was one of the most difficult features of the operation.

• **Bulldozer mucks between walls**—With all three walls in place, track loads as well as the loads of the abutments were transferred to the permanent structure. The design called for the abutment loads to be picked up on a series of permanent needle beams at right angles to the abutments and carried across the structure on heavy longitudinal beams—14-in. WF 398 lb. With the track loads and abutment loads permanently supported, the material between the walls was excavated to subgrade. This was accomplished by a bulldozer, which pushed the material clear of the structure, where it was removed by cranes working on the surface.

Final completion of the structure involved construction of the reinforced-concrete invert, intermediate slab and roof, tile lining on both inverts, and the construction of manholes and backfill up to street level.

• **Other features**—Underpassing the railroad was performed by the writer's firm under a subcontract with Angelo Paino Const. Co., which held the general contract for a half mile of sewer. In open street Paino used the standard method for building sewers more than 20 ft in depth. He drove soldier beams on 8-ft centers along either side of the proposed cut, and installed horizontal sheeting as excavation progressed. (As previously noted, this method also was used in the outer reaches of the writer's work, which extended about a half block each way from each underpass.)

Even at depths of 40 ft or more below the street and 20 ft below ground water, the soldier-beam method, supplemented by wellpoints where necessary, has been successful widely in the local soil. In certain cases, however, the construction passed under busy parkways and elevated structures (as well as under the railroads described above.) In the case of the parkways it was possible, particularly with small-diameter sewers, to make the installation by hydraulic methods, without disturbing the parkway. This was done at Malverne, L. I., where a 42-in. reinforced concrete pipe was driven hydraulically for 64 ft—14 ft below the Southern State Parkway.

Where the sewer passed directly beneath the elevated railroad, the foundations supporting the columns were only a few feet below the street, so they had to be underpinned to below the sewer subgrade. This was accomplished by transferring the column loadings temporarily to timber mats by means of heavy beams engaging brackets welded to the columns. The actual underpinning consisted of concrete piers installed in carefully sheeted pits.

• **Management**—Mario Canale was superintendent on the underpass jobs for Spencer, White and Prentis. Angelo Paino supervised general contract work, and representatives for the City of New York were William Spivak and Arthur Drake, J. W. Rowland and H. E. Raver handled the construction performed by the Long Island Railroad.

British Columbia group ponders power expansion

With increased power supplies as its object, British Columbia's government last month appointed a seven-man committee to study proposed harnassing of Columbia River Basin waters.

Directed specifically at a U. S. plan to build a dam at Libby, Mont., on the Kootenay River, the studies are to determine:

• Overall effects of the Libby development on British Columbia's economy.

• Protection and indemnity, including recompense, which the province should receive for natural resources contributed to the project.

• Extent to which the principles adopted in formulating a basis for settlement on recompense could be applied to other future developments in the Columbia River Basin.

Erection of the dam at Libby would flood 13,000 acres of land in British Columbia, extending from the border up to Wardner and involving relocation of 31 families as well as existing roads, railways and bridges—at an estimated cost of $7 million.

Ground water use in Arizona depleting water table

Use of ground water in Arizona increased by more than 50% in the 5-year period 1946-51. A recent report of the U. S. Geological Survey says that the rate of decline of the water table in heavily pumped areas has been as much as 10 ft per year, and that the ground water is being withdrawn in excess of replenishment. The report summarizes the facts collected by the survey from 1890 to 1952, principally in the Gila River basin.

The quality of ground water in most of the region is considered suitable for irrigation. However, in some areas, the concentration of dissolved solids has increased sufficiently to make the water harmful to some crops.

Seismic science service to aid New York builders

Designed to help engineers, contractors and architects in New York state, a new seismic science service is being inaugurated by Syracuse University's Institute of Industrial Research.

Earl T. Apfel, head of the department of geology at Syracuse, said the new service will make man-made earthquakes and other tests to determine rock and soil conditions below the land's surface. To determine the nature of building sites, crews will make the quakes with small charges of dynamite, then check resulting vibrations for future reference.

IN THE PLANT 2x6-in. lumber is cut in two to form studs and fluted for better glue bond (left). Plywood sheets are glued to the studs in a steam-heated press (right) to produce wall panels.

New house model—

How it is prefabricated and erected

HOMEBUILDERS as well as the general public have just been given a peek at the 1953 Gunnison home. Unveiled during the annual convention of the National Association of Homebuilders in Chicago the week of Jan. 18, the new prefabricated house points up the fact that the prefabricator is adopting some of the merchandising tactics of automobile manufacturers. Not only does the house reflect the latest design and manufacturing techniques but it is loaded with optional equipment.

Most homebuilders, however, missed the most intriguing part of this exhibit—its erection. For the big selling point is the speed with which it can be put up.

• **What the buyer gets**—The new model, called the Talisman, is 40x24 ft in plan, incorporates a 15x16-ft living room, kitchen, bath and three bedrooms. Standard equipment for it includes perimeter automatic heating with oil or gas, wood-paneled interiors with mahogany flush doors, sliding closet doors; steel kitchen wall cabinets, sink and work counters; and a glass-lined automatic water heater.

Through an arrangement with Carrier Corp., the prefab can be equipped with air conditioning. Other optional equipment offered includes an all-electric kitchen cooking range, refrigerator, clothes washer and dryer, garbage grinder and dishwasher.

Fully-equipped, the house will sell for about $12,500, depending on the location. This price, however, does not include the cost of a lot.

A purchaser of the house will be able to include in the mortgage the cost of any or all of the optional equipment. "Gunnison Homes is the first low-cost house manufacturer to offer such a comprehensive provision for maximum livability," says the company's president, John J. O'Brien, who, as a general officer during World War II, was the Army's Director of Real Property.

The Talisman house, which is being produced at the company's prefabricating plant in New Albany, Ind., was created from an original design by Henry Hill—San Francisco architect and consultant for Gunnison. It has wide expanses of glass in living and dining areas and strip, awning-type steel casement windows in the bedroom to give maximum privacy as well as latitude in furniture placement. Exterior walls are finished with cedar shakes and the roof with asphalt shingles over 15-lb roofing felt.

Wall sections, both exterior and interior, are 4x8-ft panels. They consist of 2-in. studs to which ⅜-in. plywood is glued on the outside and ¼-in. plywood on the inside. Exterior walls are insulated with glass fiber between the studs, and a rock-wool blanket is placed on top of the ceiling. The low-pitched plywood roof is supported on wood roof trusses carried by the walls. Ceiling panels are 4x12-ft sheets of ¼-in. plywood.

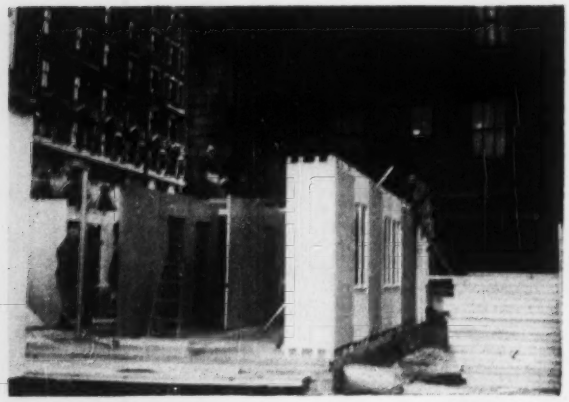
• **Production: 43 houses per day**—The New Albany plant has a top capacity of 43 houses per day. Last year, it produced nearly 8,000 houses. From February to November, total employment averaged 1,700, in three 8-hr shifts, 6 days per week. During the slack winter season, about 1,200 persons are employed, in two shifts.

When the 285,000-sq ft factory is in full production, about 1,000,000 fbm of plywood and 750,000 fbm of lumber move through it each week. An adjoining warehouse has about 60,000 sq ft of floor space.

All lumber used in fabricating the houses is No. 1 common or better, Douglas fir and hemlock. Upon arrival at the plant, it undergoes a rigid inspection, about 10% being rejected for use as cartage. The plywood is also rigidly inspected, and minor flaws are sanded and repaired.

All operations in the factory are performed in a series of assembly lines. First framing operation is the molder where 2x6-in. timbers are split in two and sized for width and thickness in one operation. They also are fluted lengthwise to provide ventilation and high glue bond strength. These finished pieces form the framework for the standard 4x8-ft sections of exterior walls, interior walls and ceilings.

Keystone of the entire operation—as well as the yardstick of daily production—is a steam-heated hydraulic press that bonds the plywood sheets to the wall-panel framing, which previously has been coated on both sides with a liquid thermo-setting resorcinol-type glue. The press handles ten 4x8-ft panels at one time, applying a hydraulic pressure of 250 psi, at a temperature of 290 F. After being bonded in the press, the panels move



ON THE SITE two-man crews erect the wall panels, bolting them together (left). Plywood ceiling and roof panels, cedar shakes and asphalt shingles complete the house shell (right).

on overhead conveyors to spray booths, for painting.

The factory has limited storage space for completed structural components of the houses. All told, it has storage space for about 10 houses. This means that trucking and rail shipments must be well synchronized with factory production. Nine loading platforms at the rear of the factory serve truck-trailers, while railroad cars are loaded at one corner of the factory. With the exception of the conveyor lines, material is handled by lift trucks.

• **Dealer organization**—Gunnison markets its houses through an organization of 400 dealers, but this total will be more than doubled during 1953 through an aggressive sales campaign. The backlog of orders is kept relatively low, averaging about 350 but not exceeding 1,000. The reason: Dealers must remit $100 for each house ordered, so they don't order very far in advance. Prices to dealers are f.o.b. the factory, with invoices payable on date of shipment.

• **Erection goes fast**—The houses are shipped as complete packages, except the bulky piping for heating, roof gutters and downspouts, and the electric wiring, which is installed at the site. Transported by truck or railroad, the houses are packaged and loaded to simplify erection. A truck-trailer carries one house, a railroad car two houses. Most units sold for delivery within a radius of 350 miles of the factory are trucked to the site by a fleet of 50 trailers, 20 of which are owned by Gunnison and leased to a trucking company.

At the site, all elements of the house are assembled with bolts. Walls are bolted to the foundation or the floor slab and to each other in successive stages. Ceiling panels are similarly fastened to the walls and the bottom chords of the roof trusses, and the roof panels, to the top chords. If necessary, therefore, the houses could be taken apart easily and re-erected on different sites.

It is common practice for a dealer to erect a house shell in one day with an 8-man crew consisting of four carpenters and four helpers. This assumes prior completion of such preliminary work as foundations, concrete floor slab, and roughed-in plumbing and electricity. Then it takes an electrician and one helper 1½ days to complete the wiring, and a plumber and one helper 1½ days to finish the plumbing.

• **Steel-panel factory**—In addition to its timber-prefabrication operations at New Albany, Gunnison Homes, Inc., a subsidiary of U. S. Steel Corp., is moving into a new field of prefabrication. A plant has been under construction for the last year near Harrisburg, Pa., for the prefabrication of insulated steel-military buildings.

Fabricated with the same 4-ft module, and assembly-line techniques of mass production as those employed in the New Albany plant, these steel structures will be completely demountable, portable, termite-proof and hurricane-resistant. Initial production, scheduled to start in May, will be for one and two -story field hospitals, barracks, mess halls, warehouses, and administration buildings.

But the implication of this new venture, relative to the home-building industry is obvious. Spelled out, it means: Military shelters today; prefabricated all-steel houses tomorrow.

Aerial ropeway aids drilling rig in Borneo

From a platform above the South China Sea off Seria, North Borneo, the Shell Company will soon start the first major search for submarine oil in the British Commonwealth.

The venture is also another first in oil-drilling history. Men and materials will be transported to the drilling platform by an aerial ropeway.

In a bid to find an undersea extension of the Seria oilfield, largest in the Commonwealth, wells will be drilled into the seabed. Underwater extensions of the field so far have been explored only by deviated wells drilled from the land, and from a platform erected in shallow waters offshore.

Four separate submarine wells will be drilled from a single fixed platform erected about a mile offshore. A tubular steel jacket, prefabricated on land, has been fixed in position on the sea bed. This foundation will support a weight up to 200 tons. One well will be vertical and the other three will be deviated, thus enabling a large area of the underlying formations to be tested.

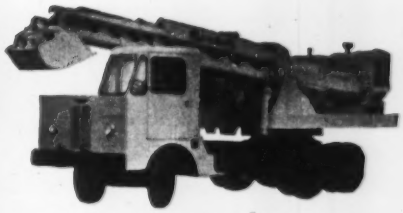
The jacket was fabricated alongside the shore, supported on two barges, each of which was equipped with a special framework assembled from Bailey bridging. On completion, the assembly was towed to sea and the jacket lowered with winches. Then four corner bearing piles were driven home by a steam hammer.

• **Piers support ropeway**—To support the aerial ropeway between the platform and the shore, supporting "piers" were placed on the seabed at 840-ft intervals. The piers rest on smaller jackets similar to that used with the main drilling platform. Lifts of up to 5 tons for materials and equipment can be handled over the ropeway. A transporter car for personnel has also been provided.

Royal Dutch Shell engineers planned the project and designed the steel structures and drilling platform.

Machine with a reach!

THE MULTI-PURPOSE GRADALL



HERE'S a particularly good example of a tough excavation made easy by the Gradall. On this job, hard-to-get-at clay had to be removed from beneath a roadbed to build a pedestrian underpass. Gradall's telescoping, *arm action* boom reached far in—often horizontally—digging close to piling, completing the job *fast* and with such precision that hand labor was practically eliminated.

You've undoubtedly encountered a number of such tough jobs you could have completed faster and better with a Gradall. And if you ask any Gradall owner, he'll tell you that he keeps his Gradall *busy*—handling a wide variety of jobs such as trenching, backfilling, ditch cleaning, grading, and pavement removal. And from one job, it's ready to speed to the next, carrying its own interchangeable attachments for the work to be done.

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A Georgia State Highway Department report, "Traffic Accidents—Highway Conditions," offers evidence of the safety of concrete pavement.

From this report a year's accidents on nine federal routes with 677.44 miles of concrete and 1437.74 miles of the other most commonly built pavement were analyzed. Traffic volume on the two types was about equal.

Accidents due to human frailty or mechanical failure were omitted. That left 257 accidents involving eight deaths, 177 injuries and $139,672 of property damage. *For equal traffic there were 2.38 times as many accidents, 3.25 times as many deaths, 4.11 times as many injuries and 4.02 times as much property damage on the other pavement as on concrete.*

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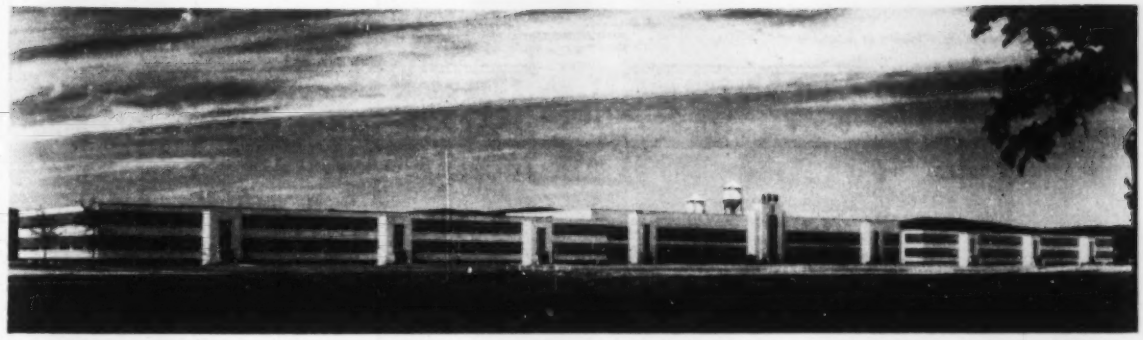


FACTORY at Poughkeepsie, N. Y., expanded by the addition of two 500-ft wings, now extends for a distance of 1,500 ft.

Factory services placed in central core

This solved one design problem, but long wings presented others, for which ingenious solutions were developed

Elwyn E. Seelye
and
C. Mortimer Throop
Seelye, Stevenson, Value & Knecht
New York, N. Y.

TWO LONG WINGS added to an existing manufacturing plant of the International Business Machines Corp., at Poughkeepsie, N. Y., represent the successful solution of several tough problems in layout planning, structural design and foundation construction. The plant was built primarily for the manufacture of defense equipment for the U. S. Air Force.

Each of the wings is three stories high, 200 ft wide and 500 ft long. They were added to opposite ends of an existing 140x500-ft building, which they resemble in exterior appearance. They are enclosed with sand-colored brick, large glass-block panels and continuous, shallow window strips.

Inside, the additions are different from the existing building, which had an exposed structural steel frame, with reinforced concrete floor slabs and concrete plank roof. (An adequate sprinkler system, installed primarily for safety, eliminated or made negligible a fire-insurance penalty.) The additions, however, are of reinfoced concrete flat-slab grid construction, because structural steel was not available when needed.

The concrete floor system is estimated to have cost about $1 per sq ft more than the type in the existing building.

• **Central bay is artery**—The two new wings were planned carefully to provide efficient facilities for manufacturing processes and ideal working conditions for employees. Consideration was given to employee welfare not only while at work but also during rest periods. Hence, the wings incorporate well planned toilet, locker and rest rooms.

Manufacturing bays are about 25x30 ft. Across the width of each wing there are three such bays on opposite sides of a 21-ft bay with mezzanines. This central bay is the aortic artery of the plant—through it flows the life blood of the manufacturing operations. It contains process mains and lighting, heating, power and air-conditioning equipment. It also contains the employee facilities and elevators.

Chief advantages of this central service core are: (1) Utilities are within easy reach. (2) Toilets, locker rooms and rest rooms are close to the workers. (3) Core utilizes space farthest from sources of natural light.

Consideration was given to placing stairways in the service core, but the idea was dropped because a tunnel was required under the ground floor, in order to take care of legal exit requirements.

Instead, stair towers are projected at intervals from the front and rear sides of the wings, adding to the attractiveness of the building.

• **Lighting and ventilation**—The interior is well lighted by natural light coming through the glass-block panels and the windows. In addition, general artificial lighting of 40 ft-c is provided with chain-hung fluorescent equipment. Individual machine lights supplement this where required for precision processes.

The factory is ventilated through prefabricated units installed in every other bay, the multiplicity of units permitting special conditions to be maintained in any section independently of other areas. These units are now equipped with steam coils for heating.

Some also have been equipped with chilled-water coils. Mains for chilled water were installed in the service core, not only for future needs but to serve areas where manufacturing processes now require temperature and humidity control in the summer. Rest rooms have individual air-conditioning systems with activated-carbon filters for odor removal.

To meet air-conditioning needs, two steam-turbine-driven centrifugal refrigeration machines, of 1,000-hp capacity each, are employed. They are located quite far from the building, near a river where condensing water is economically available. So the chilled water has to be pumped through 20-in. supply and return lines to and from the plant.

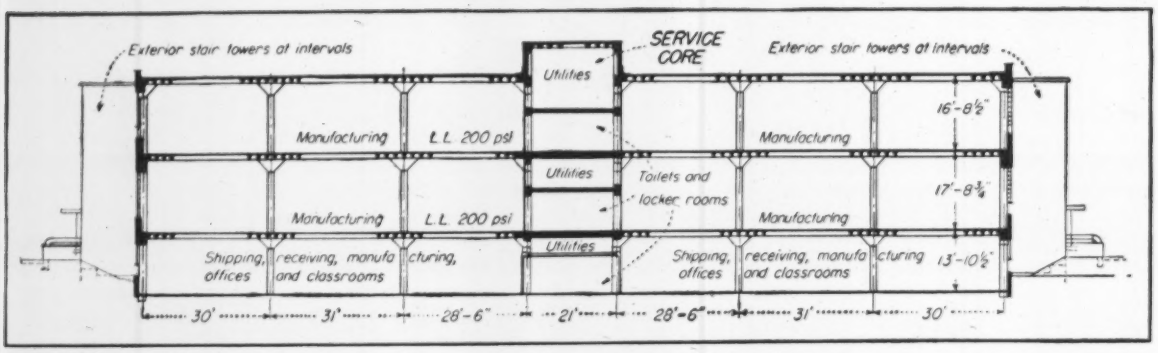
• **Footings on silt or rock**—It is worth noting that the length of the building with the two wings added on now is 1,500 ft.

Since foundation conditions tend to vary considerably over this distance, introducing the danger of unequal settlement, the designers were confronted with some very tricky foundation problems.

The existing building is supported on spread footings on sand and silt. In placing the footings, the original builder had exercised great care not to disturb the bearing strata and had lowered the water level below these strata.

A check of elevations has showed very little settlement. Hence, the designers considered the feasibility of placing the new wings on spread footings, too.

Study of the borings for these wings, however, showed rock elevations much higher under the south wing, with some outcropping, and much lower



EFFICIENT LAYOUT—manufacturing bays lie on opposite sides of a longitudinal service core.

under parts of the north wing than under the existing building. Hence, the foundation design for the additions had to differ from that for their predecessor.

• **Sliding piles**—Because of the irregularity of rock levels near the surface on the south, there could be no distinct demarcation between footings on rock and footings on soil. To eliminate the possibility of unequal settlement, the designers decided to support the south wing on piles and piers to rock. They were also influenced by a cost analysis that showed that type of construction to be less costly than spread footings.

This solution, however, did not work out as easily as expected. The rock was found to be a metamorphosed shale, which was smooth, uneven and sloping. When the thin-shell (0.20-in. thick) pipe piles, which had a flat-plate end, were driven, they slid off the bearing or crushed on the high side. Substitution of steel-point ends helped seat some of the piles, but many still drifted or sloped when driven. The only thing that could be done was to have an engineer on the job who could adjust the piles in a group after the first few were driven, adding piles to replace rejected ones, or who could redesign the footings, sloping piles in opposite directions to balance each other.

• **Settlement joint built**—For the north wing, spread footings were considered more desirable, both because of the difficulties encountered on the south wing and because of the higher cost of piles due to the greater depth of rock. However, there were several serious disadvantages—the necessity of have footings at different elevations, the tendency of the silt to run and the possibility that the footings would rest on a disturbed bottom, a highly undesirable condition. The solution arrived at finally for the north wing takes advantage of the consolidation property of the silt:

Where long piles would have been needed, the wing was placed on spread footings, and where rock was relatively close, on piers to rock. It was possible to establish lines of demarcation between types of bearing strata and decrease soil pressure to limit settlement. At the lines of demarcation, a settlement joint was carried completely through the building.

During construction of the wing, a 4-ft wide section of concrete through slabs and girders at the joint were omitted until the rest of the structure was cast. This allowed initial dead-load settlement to take place without causing cracks.

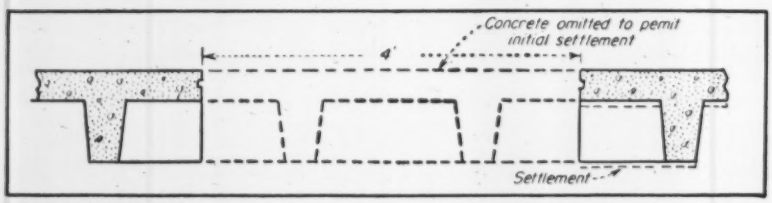
• **Other problems solved**—Another complication was the necessity of providing deep foundation pits for equipment near the footings. (These locations could not have been foreseen in the original design because of the time limit set for preparation of plans, which called for a start on foundation work before all the equipment had been decided upon.) For these pits, it was necessary to drive tight steel sheet piles, with proper corner sections, through running silt to hard bottom over rock. To prevent loss of soil under the footings, the pits were flooded, counterbalancing soil pressure with hydraulic pressure. Excavation was carried out under water. Then, a tremie seal was placed, water pumped out and the foundation cast.

There also are two noteworthy features in the superstructure. One is the use of continuous, deep girders at the longitudinal walls and center lines. These meet the need for stiffness that is required because of the heavy precision machinery installed. They also prevent deflections that might cause cracks in exterior walls and interior partitions.

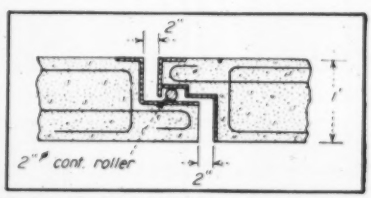
A second feature is the use of expansion joints that eliminate the need for double columns. Placed at inflection points of girders and slabs, these joints consist of a steel-faced stepped break, with the overhang resting on a steel roller on the step, as shown in the sketch.

The new wings also required a power-plant expansion, which was constructed at river level, with the refrigerating plant. Designed under the supervision of C. V. Spencer of Baker & Spencer, the power plant contains three water-tube boilers with a capacity of 40,000 lb of steam per hour.

Preliminary plans for the IBM expansion were prepared by Lacy, Atherton & Davis, architects, Wilkes-Barre, Pa. Seelye, Stevenson, Value & Knecht developed the final design and served as consulting engineers. Thomas J. Watson, chairman of the board of directors of IBM, suggested the idea for the central service core. Sordoni Construction Co., of Wilkes-Barre, Pa., was the general contractor.



SETTLEMENT joint was used between a section over rock and one over soil. This strip was cast last to permit dead-load settlement to take place.



EXPANSION JOINT on rollers eliminates need for double columns.

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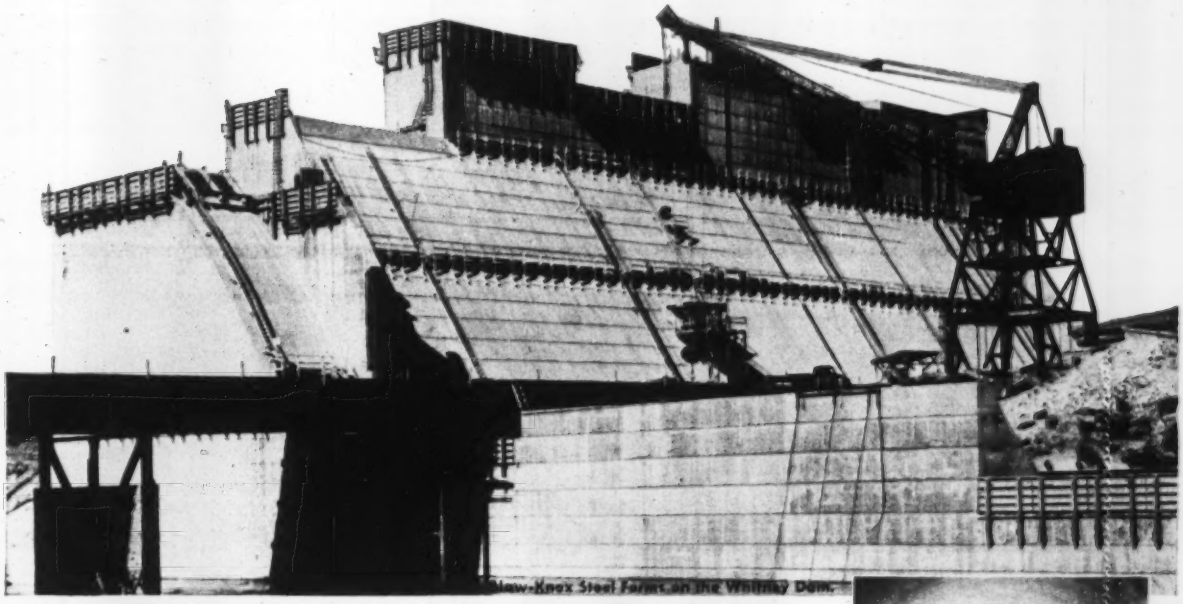

Blaw-Knox Steel Forms on the Whitney Dam.

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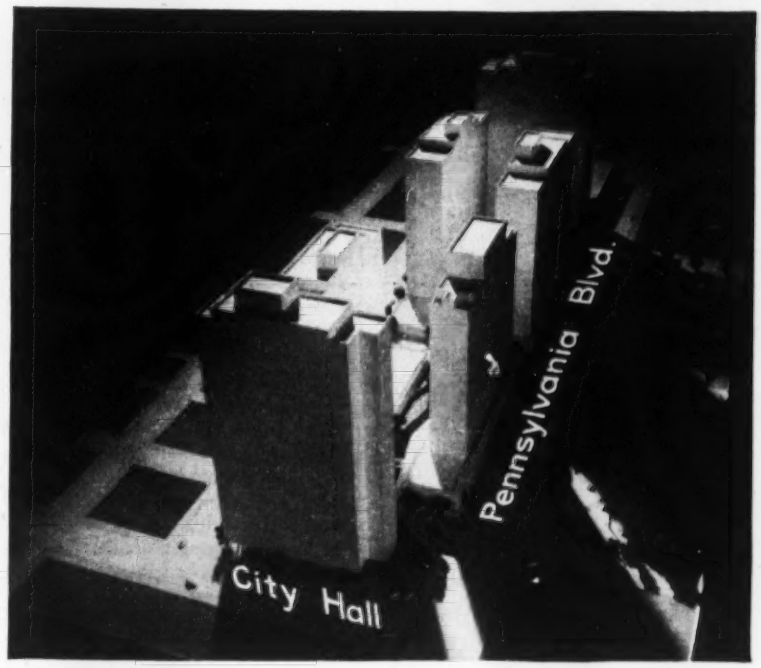

PENN CENTER, proposed by Robert Dowling, president of City Investing Co., to develop area formerly occupied by the tracks of Pennsylvania Railroad. The area known as the "Chinese Wall" in Philadelphia.

Propose new Penn Center plan

Plan would provide for center similar to Rockefeller Center at a cost of about $100 million—on site of "Chinese Wall"

A plan to develop the "Chinese Wall" site in Philadelphia, Pa., into a business, shopping, and hotel center similar to Rockefeller Center in New York City, was announced last week by Robert W. Dowling, president of City Investing Co., New York.

The plan details six skyscrapers surrounding what Dowling termed "the world's most beautiful esplanade."

Walter S. Franklin, president of the Pennsylvania Railroad, said that while there was "no deal at present," there have been negotiations "and I will say that Mr. Dowling's proposal is very attractive."

Dowling, planning consultant in building the Gateway Center in Pittsburgh's Golden Triangle, and the Parkchester Housing Center, in New York City, said: "Interest and participation in the plan by the Pennsylvania Railroad, civic and business leaders of Philadelphia, and the Equitable Life Assurance Society of the United States is being sought."

Thomas I. Parkinson, president of Equitable, said that he is interested.

It was understood that the plan has the approval of Mayor Clark, the city planning commission, and the Greater Philadelphia movement.

• **Cost and timing**—The esplanade with the surrounding buildings would be called Penn Center, the name suggested by the city planning commission.

No close estimate was made of its possible cost, but $75 million to $100 million was the amount most often heard.

Uncertainty as to when the wall site would be ready for development was another factor: The razing of Broad Street Station originally was scheduled to be completed by this March; the razing of the wall to the limit of the development, this July. The railroad said the work is running ahead of schedule.

A unique feature of the 1,000-ft-long esplanade would be the view of it seen from City Hall. One of the office buildings would rise on the site of the Broad Street Station, but it would be set on columns covered by stainless steel, raising its first floor slab three stories above the ground.

The resulting effect would be an unobstructed view of the plaza from the city hall.

The esplanade would be 80 ft wide between store fronts and 125 ft wide between the six skyscrapers.

A hotel building with about 900 rooms is to face the open square north of Pennsylvania Boulevard.

"At least two of the office buildings are expected to be taken over and used almost exclusively by single companies. Two others will provide general office space," Dowling said.

The development would be the southern boundary of the wider-scale central city development envisaged by the city planning commission.

The commission's plan proposed the removal of City Hall except for the well known William Penn tower, and the construction of a municipal building at Reyburn Plaza.

Concerning the Penn Center development, Dowling added: "Buildings along Pennsylvania Boulevard and Market Street are to be staggered in order to provide the effect of two additional plaza views.

"Generally, these four buildings will be 25 to 30 stories high. The building on the site of former Broad Street Station and the building on the west end of the esplanade at 18th Street would be 30 or more stories high.

"It is planned to build a modern ramp-type garage on the western portion of the development at 18th Street which would provide parking facilities for about 1,500 autos.

"A shopping center will be designed to serve as a complete department store.

"All buildings and shops will be connected underground with Suburban Station and City Hall's Broad Street subway concourse."

• **Unit development**—Dowling, who is

Former plans

In the Nov. 16, 1952, issue, page 48 "Engineering News-Record" carried a story of another proposed development for the so-called "Chinese Wall" site. That story concerned a plan by Albert M. Greenfield, Philadelphia real estate man, to invest—with syndicate backing—upwards of $50 million in developing the area.

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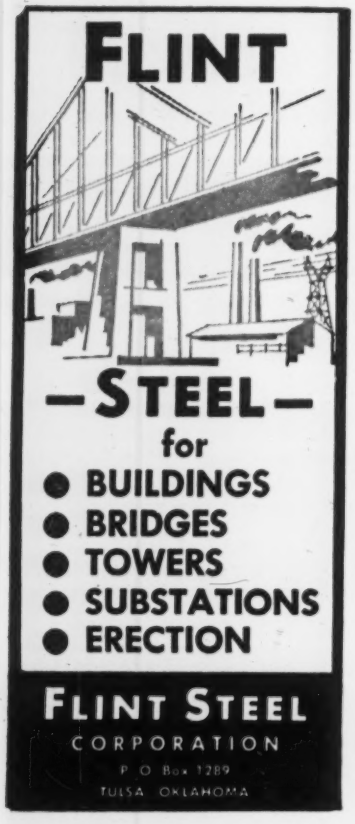
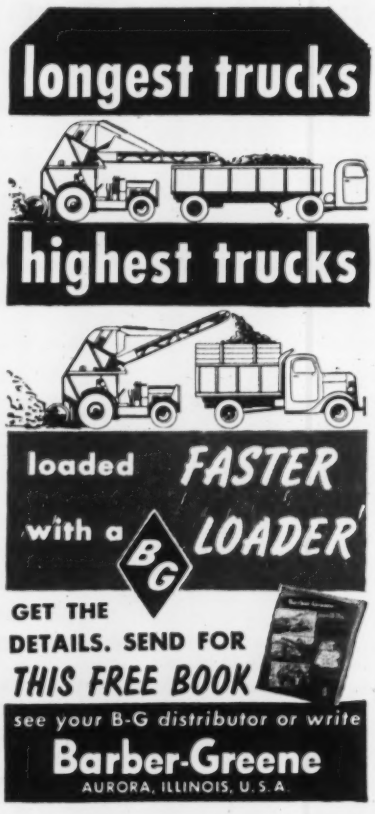




also president of New York City's budget commission and chairman of the Borough of Manhattan's planning board added: "It is proposed that this development be built as a unit with the railroad continuing promotion of the project in order that all who wish to participate in financing, construction and occupancy, will have an opportunity to fit their individual plans into a unit development."

Dowling said that his purpose in announcing the plan "is to clarify rumors which have resulted from discussions of the plans with a large number of bankers and businessmen.

"Total office space now planned for construction," continued Dowling, "would be expected to add less than 10% to the office space now available for renting in Philadelphia.

"This should present no problem with the rapid growth expected in downtown Philadelphia business during the next few years, as Equitable's Gateway project in Pittsburgh and the other new construction in the Golden Triangle during the last two years added nearly 40% to the existing rentable office space."

Seattle cross-sound bridge location is questioned

Communities across Puget Sound from Seattle, Wash., can't agree on the best site for a cross-sound bridge (ENR Jan. 22, p. 53). Since a meeting of minds is unlikely during the current 60-day session of the Washington state legislature the project may be delayed until the convening of the 1955 legislature, said Senator W. C. Raugust, chairman of the senate Roads and Bridges Committee.

The Washington Toll Bridge Authority's $82-million crossing was to be made via Vashon Island, slightly south of Seattle, in accordance with the recommendation of a board of consulting engineers, but representatives of the Northern Olympic Peninsula Communities favor a crossing at Bainbridge Island with a secondary bridge crossing the Hood Canal Waterway which further cuts off their peninsula from access to Seattle.

Hope for a Vashon Island crossing was exploded at a public hearing on Jan. 27 when a large delegation from the Northern Peninsula loudly objected that ferry service from Bainbridge presumably would be discontinued when the bridge is built and under the authority's toll bridge proposal the Vashon bridge would offer a round-about motor route from Bainbridge to Seattle.

Housing plans stymied in two cities by residents

Federal housing projects suffered setbacks last week in two cities. Irate residents of Pittsburgh, Pa., protested a proposed 2,000-unit project, and Columbus, Ohio, housing officials learned that legal delays had cost them federal-aid funds allocated for a $13-million housing plan.

Columbus got the news from Russell C. Taylor, director of the Columbus Housing Authority, who said he had been informed that federal funds, originally allocated to Columbus, had been transferred to other cities that are ready to start building. The decision apparently was made because one part of the Columbus project is tied up in a lawsuit and a petition for rezoning referendum.

The two-year-old plan involves two 524-apartment developments and includes slum elimination.

In Pittsburgh, the local housing authority heard protests from North Side residents who are trying to block the authority's proposed $24.5-million housing construction project planned for that area.

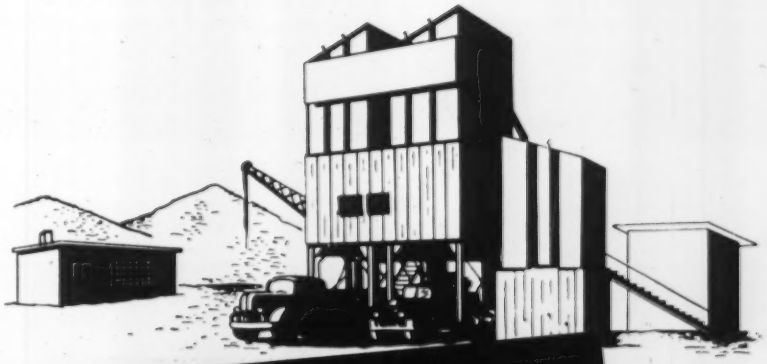
Irate housholders filed a bill of complaint in the Allegheny County Court, saying that the authority has failed to show that a need exists for the development. In addition, the North Side residents said they hope that the new national administration will frown on a scheduled government loan of $2.4 million upon which the housing agency is counting.

Under the PHA plan, the project would encompass 179 acres in Pittsburgh's City View and Summer Hill sections.

Anti-pollution order upheld by Wisconsin court

In upholding a lower court's dismissal of a request to void an anti-pollution order, the Wisconsin Supreme Court has in effect ordered the city of Superior to build a $2-million sewage disposal plant to treat the waste the city dumps into the mouth of the St. Louis River.

Superior was ordered in 1950 to build this plant by the Wisconsin committee on water pollution. The city contended that the order exceeded the committee's authority and that compliance with it would require the city to go beyond constitutional debt limits. Construction of treatment facilities by July 1, 1953 was ordered by the committee, which stated that Duluth provided treatment of its waste into the bay.



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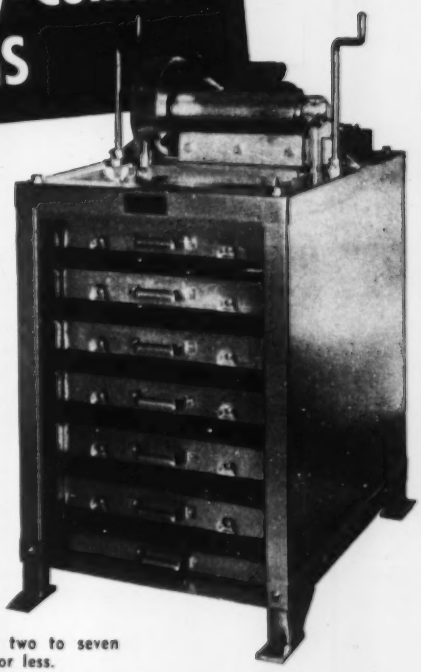

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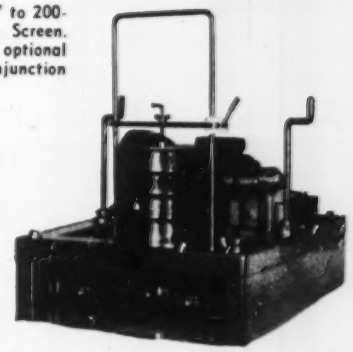

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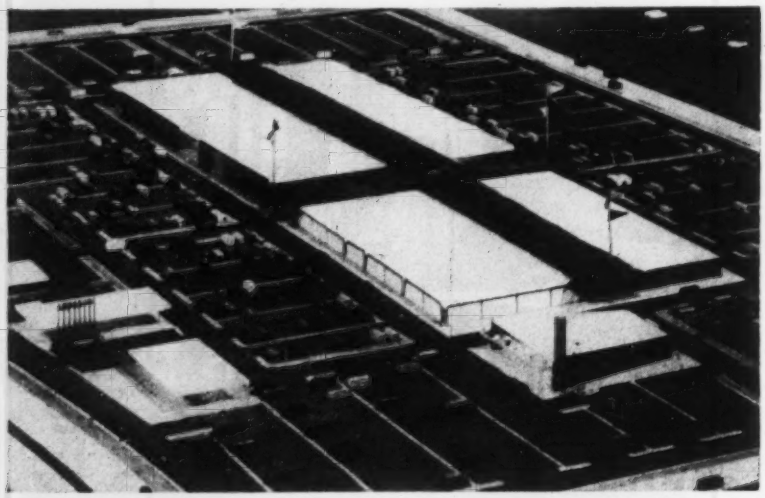

HOLLANDALE SHOPPING CENTER in Arlington, Tex. The arcades (domed dark cross) will be air conditioned along with the stores.

Air-conditioned shopping centers may spark new trend in design

There is one thing you can count on in Texas. That's high summer temperatures.

Normally, Dallas swelters under 90-deg temperatures 100 days a year And 1952, a record-breaker, produced 126 days with temperatures over 90, thirty-eight days with the mercury over 100.

With these searing facts in mind, Dallas developers this year are planning to begin construction on three completely-enclosed, air-conditioned shopping centers that promise to set a new trend wherever excessive weather conditions keep potential shoppers at home.

His car once parked, a patron of any of the three new shopping centers will be able to go from one store to another without getting a blast of heat (or cold) at each intervening space.

• **Completion in 1954**—The three centers—each costing about $2 million—will get under way about the middle of this year. Completion dates: Early or mid-1954.

The developments are:

• The Hollandale Shopping Center in booming Arlington, Tex., midway between Dallas and Fort Worth. It will be built just south of a sprawling $21-million General Motors plant that eventually will employ 6,000 persons. Owner of the new center will be Arlington Development Co. Architect is E. G. Hamilton of A. B. Swank Associates, Dallas.

• A shopping center (unnamed as yet) in the fast-growing northeast corner of Dallas. Developers H. Leslie Hill and Avery Mays of Dallas are planning the project. Harwood K. Smith and Joseph M. Mills are the architects.

• The Wynnewood Shopping Center expansion in southwest Dallas. Developed by Wynnewood Village, Inc., and planned by Roscoe DeWitt and A. B. Swank, Dallas architects, the completely air-conditioned building will more than double the size of one of Dallas' current top neighborhood shopping centers.

• **Hollandale Center**—According to current plans, all stores in the Hollandale project will be housed under one roof in a 280 by 950 ft, one-story building. Running lengthwise and crosswise in the structure will be wide domed streets or arcades, completely air conditioned.

Hollandale will have about 250,000 sq ft, of which 220,000 sq ft will be commercial space and the remainder arcades and walkways.

It will be placed in the center of a 37-acre plot, with parking for 2,000 autos.

The long, east-west arcade, will be 45 ft wide, while the short, north-south arcade, will be 60 ft wide.

To avoid a corridor effect in these air-conditioned arcades, Hamilton hopes many stores will scrap conventional display window fronts facing the indoor streets, and allow their counters and selling displays to "flow" out into the arcades. At night, grillwork gates could be lowered to protect merchandise.

Where the two arcades come together, the architects hope to have a large open space, suitable for square dancing, rallies and community activities.

The planners hope the layout will encourage shoppers to wander from store to store, as they would at a fair. Major selling display will be concentrated on the interior streets.

Under present plans, the roof of the structure will be flat, and bids will be taken on various roofing materials. The walls holding the arched arcade roofs (which may have a skylight arrangement to admit daylight) will have clerestory windows.

Several individual buildings—for theater, office building, medical clinic, service stations and motel—will be outside the main air-conditioned building.

Air-conditioning plans have not been completed, Hamilton reported, but the developers already have decided to locate the equipment in a separate building. The architects are looking into pressurized small-duct systems.

• **Hill's center**—Developer Hill said his air-conditioning equipment will be placed in an underground basement 30 by 40 ft, under the parking lot adjoining the shopping center. With his planning further along in this respect than Hollandale Center, Hill estimates he will need 500 tons of equipment.

Hill reported that the enclosed arcades in his center will increase the space to be air conditioned by one-third.

However, he said, the air-conditioning cost for tenants will be up only 10% because one air-conditioning unit will be serving all stores; a lot of the heat loss of winter, and cool-air loss of summer, will be eliminated because customers will be using interior entrances to gain access to the various stores.

Unlike the Hollandale Center, Hill's development will not have uniform ceiling height for all stores in his project.

Over stores in the center, the roof will be about 14-ft high, with a 22-ft roof over the arcades. A corrugated plastic monitor arrangement is planned tentatively as the counterpart of the clerestory windows in the Hollandale project.

In the center of the Hill development will be a 115 by 310-ft "park"

or resting area. Cafeteria-style restaurants will be located at either end of this area.

There will be no skylights, as in the Hollandale Center, because Hill thinks this would produce too great a heat loss.

The Hill shopping center will contain, under present plans, about 285,000 sq ft, of which 230,000 sq ft will be in commercial space, and the rest walkways and Hill's unique indoor park.

Parking space for about 1,400 autos will be provided.

• **Wynnewood**—The new Wynnewood shopping center, still in the early planning stage, will not have the regular shapes of the Hill and Hollandale centers. That's because of the nature of the terrain, architect A. B. Swank explained.

Instead, the center really will be four separate buildings (rectangular in shape) linked or connected by irregularly shaped entrances.

Air-conditioned arcades through the two middle buildings will enable the customer to walk from one end of the project to the other without going outdoors.

The center will enclose 250,000 sq ft, according to architect Swank, and parking for 2,400 autos will be provided. To eliminate congestion in the center, a street will encircle the shopping district.

The location of the air-conditioning equipment has not yet been worked out. This depends on the roofing arrangement, still being planned.

• **Advance**—All three planners—Hamilton, Hill and Swank—think their projects will represent important improvements in shopping-center development.

Said Hamilton: "If these centers click, as we hope they will, completely air-conditioned shopping centers may prove to have unprecedented selling appeal."

Start water plant project

Arizona Public Services has started a $254,000 project at Yuma, estimated to double that city's water-treatment plant capacity. The contract is part of a $1-million expansion program for Yuma water facilities. Fisher Contracting Co. of Phoenix holds the 150-day contract for additional sedimentation and filtration basins with supplemental chlorination and pumping equipment at the main plant.

Housing-redevelopment plan revived for Portland's Vaughn Street area

Housing agency offers funds; wants public housing included in redevelopment proposal

Urban-redevelopment proposals for a 44-block district in Portland, Ore. (ENR Sept. 25, 1951, p. 65) were brought back to life last month, but a controversy over construction of public housing immediately placed new hurdles. Voters last fall refused a $2-million bond issue to finance the municipal share of net costs.

The revival came with the Portland Housing Authority's offer to put up the city's share of the cost of the Vaughn Street program. This calls for clearing of the area and resale of the land for light industrial use at a cost of some $7 million. Mayor Fred Peterson and a majority of the city council approved the plan.

Officials and civic groups that supported the defeated bond proposal believe that the voters opposed further municipal tax burdens but not the idea of redevelopment.

The new balk appeared when the housing authority announced plans to link the building of 200 housing units to the redevelopment plan, providing housing for families moved out of the area.

• **Opposition**—Here the mayor and council protested, declaring that already there is too much vacant housing in the city.

Within a day after three of the council's five members voiced their opposition to the housing-redevelopment combination, PHA officials declared they would be able to go ahead with their plans for housing regardless of council sanction.

But the redevelopment proposal is another problem, for council approval is required by law. Also, Oregon's Supreme Court is currently hearing an appeal from a circuit court ruling on a property owner's suit fighting redevelopment. The suit was filed last fall prior to the election. A circuit court judge had upheld the right of PHA and the city to redevelop lighted areas.

Francis A. Staten, vice-chairman of the PHA board, said that federal government participation in the redevelopment would depend on Portland's providing adequate housing for all families affected by the Vaughn Street project. Staten added that he did not believe this possible. According to PHA surveys, at least 100 families would be unable to obtain adequate quarters in the existing private-housing market.

• **Funds available**—PHA has approximately $4.5 million in its treasury, proceeds of the resale of land which had been the site of war-built federal housing acquired by the agency. Under laws governing PHA, the authority can either build permanent-type low-rent housing, undertake redevelopment of blighted or slum areas, or put the cash into a bank.

The agency figures that the Vaughn Street project, one of three Portland areas designated for redevelopment, would have a net cost of about $4.5 million and that resale of the cleared tract would bring in some $2.5 million. Of the net cost, the city—or PHA if its offer is accepted—would be obligated to one-third. The federal government would supply the remainder.

The Portland city council already has qualified the project for preliminary federal monies: $1.4 million has been earmarked for Portland.

Municipal briefs . . .

• **Joint disposal plan**—Refuse disposal on a county-wide basis is being sought by boroughs and townships in Pennsylvania's Allegheny County. A spokesman for borough and township associations said last week that both groups are sponsoring amendments to existent codes which would permit operation of joint refuse dumps.

• **Would create port groups**—Bills to provide two port authorities in Pennsylvania—one in Allegheny County and Pittsburgh, the other along the Delaware River north of Philadelphia—have been submitted to the state's general assembly. The Allegheny County Port Authority plan would create an authority for development of river transportation facilities and ports in the Pittsburgh area. The Delaware River measure would expand powers of the Delaware River Joint Toll Bridge Commission, extending the boundaries down-river to Philadelphia's city line and including the Morrisville area.

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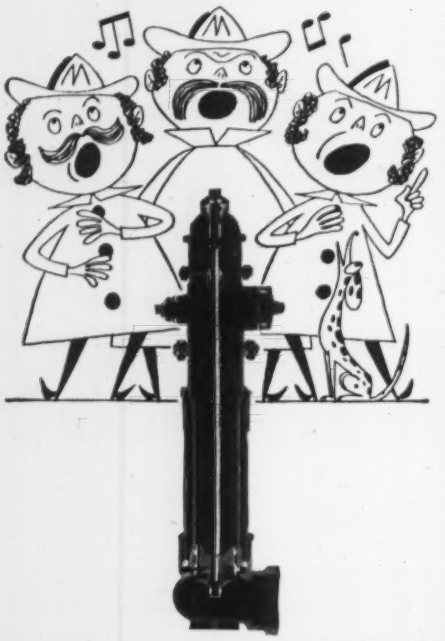

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OBITUARIES

Warren H. Thompson, 59, a structural engineer for more than 25 years and a partner in the firm of Thompson, Beame, Gill & Schlenker, Buffalo, N. Y. died Jan. 27.

James C. Brookshire, 69, retired Charlotte, N. C., building contractor and until his retirement four years ago senior member of the firm of J. C. Brookshire and Sons, died Jan. 29.

C. Fred Capes, 61, road superintendent of Boulder County, Colo., died at Boulder, Jan. 30. He had been with the U. S. Bureau of Public Roads for many years, his last assignment having been as highway engineer for forest districts under the Denver Office of BPR. He was construction supervisor for the final 600 mi of the Alcan highway.

Spencer William Lowden, 65, district engineer for the California Division of Highways in District VIII at San Bernardino since 1950, died Jan. 13. He studied engineering at St. Mary's University and Van Der Naillen Engineering College in Oakland, Calif. He joined the state division of highways in 1912 as a rodman, and in the period since 1925 served as district engineer at Redding, San Luis Obispo, Bishop and San Bernardino.

John Daniel, 82, well known San Francisco rock contractor, died in San Francisco Jan. 20. Mr. Daniel started his carrer as an associate in his father's marble contracting business, and later expanded the firm into a general contracting concern. He participated in the building of the piers on the San Francisco waterfront, the construction of Treasure Island in San Francisco Bay, and the first Key System trans-bay train routes.

Henry A. Stahl, 90, retired assistant treasurer of the New York Central R.R. Co., died at Chappaqua, N. Y., Jan. 29. He studied civil engineering with the city engineer of Buffalo, N. Y., and in 1898 joined the N. Y. Central as an office engineer.

James B. Swett, 68, Southern Pines, N. C., consulting engineer, died Jan. 31. He attended Brooklyn Polytechnic Institute and obtained his civil engineering degree at Norwich University, Vermont, in 1906. For three years after graduation he was an engineer in the Philippines.

British, Dutch rush flood repair work

Storm brings "greatest engineering problem" to England and Netherlands as sea defenses are undermined, crumble

Dutch and British engineers were concentrating this week on stopgap measures to prevent another spring tide (expected this weekend) from compounding the devastation wrought by gale-driven floods that breached the sea defenses of the two countries last week.

While a British cabinet minister could say with assurance that Britain was confronted with "one of the greatest civil engineering problems we have ever had to face," estimates of the cost of reconstruction were still pretty much in the realm of theory.

But there was nothing theoretical about the engineering job itself: Provisional repair of burst dikes in Holland was under way early last week. It was believed that a regular repair program, which undoubtedly would include new measures for strengthening the dikes, would take up to two years. There was talk also of a plan to end diking by sealing off from the sea the three main sea arms of Zeeland Province.

• **Britain's job**—For Britain, the immediate task seemed somewhat easier. By expediting first aid to seawalls (and barring heavy rains), British engineers were hoping to have all but superficial flood water drained within another week. Some pumping has been required inland, but most rivers are tidal, enabling draining to be effected at low tide through control of locks.

Earth seawalls dating back several centuries were breached for the first time in British history. Those walls, made chiefly of clay bound with pitch, originally were faced with stones. Concrete blocks replaced the stones as they fell away over the years. This was believed to be a means of restoring the original strength of the walls.

British engineers claim the basic wall construction is sufficient, but maintenance has not been adequate. In most cases, that is a local responsibility, with special taxes on land and buildings, in the areas subject to flooding, providing the only income.

In view of the heavy cost of reconstructing the seawalls, Parliament will have to come into the picture, if not to set up a special agency, then to grant large funds. Repairs are reported likely to cost $100 per foot. And, in cases of large breaches, steel sheet piles at twice the cost may prove necessary.

Britain's heaviest damage centered around the estuaries of the rivers Humber, Yare, Orwell, Blackwater, Thames and in the area known as the Wash. As tides swept over retaining walls, undermining them from behind, flood waters covered 250,000 acres of farmland and left about 30,000 persons homeless between the estuaries of the river Humber and the Thames.

• **Dutch problems**—Early estimate of damage to southwestern Holland was put conservatively at 1 billion guilders ($260 million). Aside from heavy direct damage to several hundred sea and river dikes, some 450,000 acres of land were flooded. No attempt has been made to estimate the cost in time and money of rehabilitating the damage or destruction of some 60,000 dwellings and public and commercial buildings, and public utilities.

Also, sea defenses northward from the hook of Holland must be repaired and strengthened.

• **Industrial damage**—Unlike the Netherlands, Britain suffered some significant damage to industrial property, notably three new oil refineries in the Thames estuary. All three, in varying degrees of completion, were built on reclaimed tidal lands. One just built by Socony Vacuum at Croydon, on the north bank of the Thames, started production only the day before flood waters rose. The Sunday night shift had just 15 minutes warning to shut down. Quick action is believed to have saved most refining equipment but damage to pumps, electrical equipment and supplies was heavy.

On the south side of the Thames, flood waters washed over gates of drydocks at the Royal Navy's Sheerness Yard, sinking a submarine and capsizing a frigate. Both ships were salvageable but damages exceed $2.8 million.

The Dutch escaped with relatively light industrial losses. Damage to shipyards at Flushing and Rotterdam was reported to be reparable in a month.

Belgium's major damage was the sea dike between Knocke and Heyst and the town of Ostend. Antwerp harbor escaped with moderate damage. Total Belgian damage has been estimated at 200 million francs ($4 million).

Reindollar heads road builders Group

Maryland consulting engineer, active in highway work for 43 years, presides over highway constructors

This week, Robert M. Reindollar, at present a consultant in Baltimore, Md., was elected president of the American Road Builder's Association.

He began his career in highways in 1910 as a rodman on a survey party for the state roads commission in Maryland. He then worked his way up through the organization.

At an early period in his career, he was transferred to the construction division and was assigned as an engineer on all types of road and bridge construction.

During 1917 and 1918 he was employed by the Raymond Concrete Pile Co., as a superintendent on foundation work in shipyards, steel and industrial plants, as well as on military reservations.

• **Returns to roads**—Reinstated with the roads commission in 1919, Reindollar was placed in charge of the survey division and was responsible for the making of surveys, preparation of plans and estimates for new construction work and quantities for final payments to contractors.

Advanced to assistant chief engineer in 1929, he was in charge of construction and maintenance activities, as well as traffic problems. As a collateral duty he selected and purchased all construction equipment used by the highway department.

• **Leads highway program**—In 1945, Reindollar was appointed chairman of the commission. He was retained in this position under two successive governors, leaving it in 1951 at a change in administration.

During his term as chairman, Maryland accelerated its highway program, spending $50 million yearly where $7 million was the rule.

He headed the commission when the arrangements and construction of the Chesapeake Bay Bridge—a $43-million project—were carried to substantial completion.

Since 1951 he has been engaged in private practice as a consulting engineer on highway engineering and traffic problems.

• **Activities**—Reindollar has been active in both the ARBA and American Association of State Highway Officials. He has served as director of ARBA since 1949.

During his 16 years of service on the board of directors of the Automobile Club of Maryland, Reindollar gained an insight into the motorist's viewpoint on highway construction.

Experiment station chief to join trucking group

H. A. Mike Flanakin, acting director of the Engineering Experiment Station at Louisiana State University, Baton Rouge, La., has been appointed highway engineer for the American Trucking Associations, Inc. Born in Big Sandy, Tex., Flanakin, a graduate of LSU, has been associate professor of engineering there since 1947 when he established courses in highway engineering and transportation.

From 1927 to 1936 he worked on highway construction and bridge design for the Louisiana Highway Department and up to 1951, when he assumed the duties of acting director of the Experiment Station, he served as a traffic and planning consultant to municipal, state and federal groups in the area.

During the war Flanakin served as a major in the U. S. Army Transportation Corps.

Highway jobs go begging

North Carolina's State Highway Commission has been informed by its chief engineer, W. H. Rogers, that the 10% pay increase proposed for all state workers is not enough to attract engineers—fresh out of college—to work in the highway department. Salaries of $350 a month and up are being offered by private industry with three or four jobs to pick from, and the state increase brings the highway department's offer to only $309 monthly.

Many engineers came to the department in the 1920's and are now nearing retirement age, and the inability to attract young personnel will prevent the building up of technical staffs and place North Carolina's road program in jeopardy, said Commissioner Wilbur Clark.

The department already has lost some of its engineers because of a delay in receiving the 10% increase. With the completion of the state's $200-million secondary roads program, efforts are being made to bring engineers from division offices to the state office in Raleigh, but requests for temporary transfers have met with reluctant response. The engineers want transportation back to their homes for weekends and living expenses while in Raleigh, the commission was warned.

Careers . . .

• **Appointed**—**Robert B. Garrabrant,** former ENGINEERING NEWS-RECORD Washington editor, has accepted appointment as Secretary of the Industrial Council of the Urban Land Institute. He has served recently as assistant manager of the construction and civic development department, U. S. Chamber of Commerce . . . Secretary of the Interior **Douglas McKay** last week announced designation of **John W. O'Nan,** Pittsburgh, as chief of the scheduling and expediting branch, Defense Electric Power Administration . . . Appointment of **Howard Leland Smith** as vice-president and project manager for Richard Hawley Cutting & Associates in the company's Paris (France) offices has been announced.

• **Elected**—Turner Construction Company's board of directors has named **F. B. Warren** vice-president and treasurer . . . **Carroll Mann, Jr.,** Greensboro, N. C., consulting engineer was installed as president of the North Carolina Society of Engineers last month . . . New president of the Colorado Society of Engineers is **Alfred J. Ryan,** Denver . . . Cleveland's Society of Professional Engineers has named as its president **J. E. Atchison,** vice-president of Iron Fireman Manufacturing Co. **L. B. Allen** will take over the top post of the Engineers Club of Memphis.

• **Resigned**—**Lt. Gen. Raymond A. Wheeler** will offer his resignation as chief engineer of the World Bank soon after his return from India . . . **Col. Arthur C. Adair** last month retired from Army service after 34 years. Since 1923, Col. Adair has been a valuation engineer with the Bureau of Internal Revenue . . . **G. L. McLane,** district engineer of U. S. Bureau of Public Roads at Phoenix, retired last month . . . Retirement of **Hale Sutherland,** professor of civil engineering at Lehigh University for 23 years, was announced last week.

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CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.
ELSIE EAVES, Manager *J. A. MAHONEY, Reports* *M. R. ROESSLER, Statistics*

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

Conn., Essex—SCHOOL—B.A. 2/20—Town Consolidated Elementary School Comn., Municipal Bldg., consolidated elementary school, adjoining Centerbrook School. $750,000. Plans deposit $50. Westcott & Mapes, 109 Church St., New Haven, archts. CD 1/25.

▲ **Me., Rumford**—HYDRO-ELECTRIC GENERATING PLANT—B.A. 2/24—At office Charles T. Main, Inc., engr., 80 Federal St., Boston, Mass. (selected list bidders) redevelopment masonry hydro-electric generating plant, 6,400 kil-hydro-elect unilts, facilities, for Rumford Falls Power Co., Philip Thomas, ch. engr., Rumford, Me. $2,000,000. CD 9/19/52.

SOON LETS CONTRACT—BUILDINGS

▲ **Conn., Bridgeport**—PLANT EXPANSION—General Electric Co., River Rd., Schenectady, N. Y. soon lets contract, 99,000 sq. ft. plant expansion, Bond St. $3,000,000. Westcott & Mapes, 109 Church St., New Haven, archts. CD 12/12.

BUILDINGS

LOW BIDS AND CONTRACTS

The Minat Corp., 220 Cumberland Ave., Portland, Me. Owner Builds. $510,000. 100 RESIDENCES, BRUNSWICK, ME. CD 2/2.

MIDDLE ATLANTIC

BIDS ASKED—BUILDINGS

▲ **Md., Easton**—HOSPITAL—B.A. 2/25—Easton Memorial Hospital, S. Washington St., 4 story, brick, steel, concrete Easton Memorial Hospital addn., kitchen, dining room, power plant, alterations, $1,500,000. Plans deposit $35. Jas. R. Edmunds Jr., 1025 St. Paul St., Baltimore, archt. Jas. Posey & Assoc., 10 E. Pleasant St., Baltimore, mech. engrs. Alex. E. Forrest, 814 Park Ave., Baltimore, struct. engr. CD 11/26/52.

N. Y., New York—HOUSING—B.A. 2/25—New York City Housing Auth., 63 Park Row, Zone 7, foundations and general constr.; heating and ventilating; electrical work; plumbing; install elevators for Carver Houses Proj. No. NYS-56, Sect. I, incl. Bldgs. Nos 1 to 6 (inclusive) in area bounded generally by E. 102 St., Park Ave., E. 99 St. and Madison Ave., Manhattan Boro. Plans deposit $75, $25 elevators. Extended date. CD 1/8.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW YORK**—State Dpt. P. Wks., The Governor Alfred E. Smith State Office Bldg., Albany,
American Bridge Div., U. S. Steel Corp., 71 Broadway, New York, N. Y., LB. $3,182,265, est. $3,762,000, 1.6 mi. steel superstructure, incl. railing on previously constructed concrete abutments and bents on western half of bridge;
Construction Aggregates Corp., 1 E. 42 St., New York, N. Y., LB. $1,031,470, est. $1,036,000, constr. 10 rein.-con. rigid frame bents to serve as foundation for 0.1 mi. of bridge's center sect., foregoing for foundation and superstructure work on Tappan Zee Bridge, New York State Thruway, Rockland and Westchester Counties. CD 12/17, under LB and 1/6;
Potter-DeWitt Corp., Pavilion, N. Y., LB. $308,610, est. $312,000, 91 ft. single span stone-faced rein.-con. rigid frame bridge 36 ft. wide, to carry Manitou Beach Rd. over Lake Ontario State Parkway, northwest of Rochester, Monroe Co. Bids Jan. 29. CD 1/6.
▲ **NEW YORK**—State Dpt. P. Wks., The Governor Alfred E. Smith State Office Bldg., Albany,
Johnson, Drake & Piper, Inc., 86 Trinity Pl., New York, N. Y., LB. $3,137,343, est. $4,050,000. grading, paving, drainage facilities 7.68 mi. sect. New York State Thruway north of Mill Grove and Crittenden between Rtes. 5 and 33, Erie Co.; LB. $8,247,119, est. $9,234,000. grading, paving, drainage facilities 12.7 mi. sect. New York State Thruway from point west of Port Gibson Rd. at Manchester Center easterly to the north of Clifton Springs and Phelps to Seneca-Ontario Co. line, Ontario Co.;
Rusciano & Son Corp., 728 E. 212 St., New York, N. Y. LB. $1,731,176, est. $1,785,000, traffic interchange facilities on Major Deegan Expressway at Grand Concourse, New York City, Bronx Co.;
Charter Oak Constr. Co., Inc., 525 Main St., Hartford, Conn., LB. $389,167, est. $397,000. reconstr. with rein.-con. 0.4 mi. Rte. 23 west of Claverack, incl. replacement of existing Claverack Creek concrete slab bridge with new six-span 300-ft. I-beam bridge, Columbia Co.;
Dale Eng. Co., 404 Court St., Utica, N. Y. LB. $896,610, est. $978,000, b. conc. 2.43 mi. Black River Blvd. Arterial Rte. in Rome and for installation traffic signal sys. along the route, Oneida Co.;
John C. Peterson Constr. Corp., 958 Church St., Baldwin, N. Y., LB. $316,600, est. $371,000, wid'n., b. conc. resurf. 3.32 mi. Rte. 25A, (North Shore Hy.) between Northport and Ft. Salonga in Towns of Huntington and Smithtown, Suffolk Co.;
H. L. Baughman, Inc., E. Henrietta Rd., Rochester, N. Y. LB. $398,845, est. $399,000, c. conc. reconstr. 1.01 mi. Rte. 383 southwest of Rochester, incl. new three-span bridge over Big Black Creek, whose main channel is to be relocated to point approx. 1,000 ft. south of present bridge crossing, Monroe Co.;
Green Island Constr. Co., Watervliet, N. Y., LB. $284,304, est. $321,000, constr. 20-ft. wide bit. macad. pavement 4.73 mi. County Rd. 32, from Bristol Center westerly approx. 4 mi., then northward to Jones Corners at Rte. 20A, Ontario Co. Bids Jan. 29. CD 12/29 and 1/6.
▲ **NEW YORK**—State Dpt. P. Wks., The Governor Alfred E. Smith State Office Bldg., Albany,
Frank Mascali & Sons, Inc. 120 St. and 31 Ave., Flushing, N. Y. CA. $734,637, est. $782,000, Van Wyck Expressway, Van Wyck Expressway Conn., Grand Central Parkway, Cont 15, 5.78 mi. FA.VWE, 52-1, FA GCP. 52-1, Queens Co.;
D. W. Winkelman Co., Inc., Heffernan Bldg., Syracuse, N. Y, CA. $3,849,036, est. $4,543,000, New York State Thruway-Ontario Sect. Subs. 7A, 7B, 8A, 8B (Winslow Rd.-Rte. 15); Reed Rd.; East River Rd.; Farrell Rd.; Rochester-Scottsville, Pt. 2, S. H. 79, Thy. 2.84 mi. Scc 2.2 mi. OT. 52-18, ST 52-31, RC 52-115, Monroe Co.;
John Arborio, Inc., West Cedar St., Poughkeepsie, N. Y. CA $1,117,575, est. $1,265,000, Palisades Interstate Parkway, Pt. 1 and 2 (Rte. 45-Queensboro-Bear Mt.) Tompkins Cove-Highland Lake, SH 593, Highland Lake-Fort Montgomery, SH 5480, 5.07 mi. PIP 52-3, PIP 52-4P, RC. 52-114, Orange and Rockland Counties;
Savin Constr. Corp., 10 Village St., East Hartford, Conn., CA $4,065,227, est. $5,164,000, New York State Thruway-Catskill Sect. Sub. 7 (Rte. 23A to 9W), Rte. 23 Interchange; Sooky Hollow Rd.; Athens Leeds Rd.; Catskill So. Cairo, S. H. 613, Thy. 4.65 mi. Acc. 2.89 mi. C. T. 52-9, ST 52-32, R. C. 52-116, Greene Co.;
Louis Mayersohn, 36 State St., Albany, N. Y., CA $2,210,914, est. $2,658,000, New York State Thruway-Mohawk Sect.-Sub. 5 (Verona-Lowell); Vernon-Verona Sta. S. H. 1930, Augusta Rd., Lowell and Spencer Sects., S. H. 438, Tilden Hill Rd.; Town Rd.; App. to Tilden Rd., Westmoreland-Lowell Rd., Thy. 4.59 mi. Acc. 1.5 mi. M. T. 52-17, S. T. 52-33, RC 52-117, Oneida Co. Grand total $11,977,389. CD 12/8, under LB.
Intrusion-Prepakt, Inc., Union Commerce Bldg., Cleveland, O., LB $845,032, est. $926,038. permanent repairs, Movable Dam No. 5 and Lock No. 9, Rotterdam Junction, Barge Canal, Schenectady Co., NEW YORK. State Dpt. P. Wks., The Governor Alfred E. Smith State Office Bldg., Albany. Bids Jan. 29. CD 1/6.
▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany,
The Grandview Constr. Corp., 740 S. Fulton Ave., Mt. Vernon, N. Y. CA $3,875,249, est. $4,428,000, New York State Thruway Mohawk Sect., Subdivision 1, Mont. Co. Line-Gregg Rd.—Co. Rd. 298; Crawford Rd.; Gregg Rd.; Camp Pattersonville Rd.; Rotterdam Water Tower Access Rd.; Pattersonville-Scotch, S. H. 1482, 4.77 mi. Thruway, 1.5 mi. access. MT 52-18, ST 52-35, RC 52-123, Schenectady Co. Bids Dec. 30. CD 1/5 under LB.
▲ **NEW YORK**—Bureau Contracts & Accounts., The Governor Alfred E. Smith State Office Bldg., Albany,
A. S. Wikstrom, Inc. Box 217, Skaneateles, N. Y. CA $3,753,517, est. $3,916,000, New York State Thruway Ontario Sect., Sub. 3, (Tyre—3/4 mi. west of Montezuma) Halsey Corners-Savannah Pt. 1, S. H. 8323 4.15 mi. Thruway, 0.63 mi. access. Cont. O. T. 52-23P, E. C. 52-120, Cayuga and Seneca Counties,
Bero Eng. & Constr. Corp., McKinley Bldg., Buffalo 2, N. Y., CA $4,073,379, est. $5,000,000, New York State Thruway, Ontario Sect. Sub. 14 (Transit Rd.—Ransom Rd.) Transit Rd. interchange; Gurville Rd.; Marginal Rds. 5.46 mi. thruway, 3.46 mi. access. Cont. O. T. 52-22. S.T. 52-23, Erie Co. Bids Dec. 18. CD 12/23, under LB.
▲ **Woodcrest Constr. Co., Inc.**, 369 Lexington Ave., New York, N. Y. CA. $1,279,000, const connection between New Jersey approach to George Washington Bridge and Palisades Interstate Parkway, Stage II, Cont. GWB-140.003, NEW YORK, N. Y. Port of New York Auth., 111 8th Ave., New York 11, N. Y. Bids Dec. 23. CD 1/8 under LB.
▲ **NEW JERSEY**—New Jersey Hy. Auth., State Hy. Dpt. Office Bldg., 1035 Parkway Ave., Trenton,
Poirier & McLane Corp., 33 W. 42 St., New York, N. Y., LB, $1,195,365. 17 land piers and foundations to carry Garden State Parkway bridge over Raritan River between Perth Amboy and Syreville, Middlesex Co, Contract No. 14. Bids Jan. 29. CD 1/13.
▲ **NEW JERSEY**—State Hy. Dpt., 1035 Parkway Ave., Trenton,
National Structures Corp., 10 E. 40 St., New York, N. Y. CA. $1,468,362, 0.566 mi. Route 21 Section 4-C from Oriental St. to Chester Ave.; viaduct walls and partial road constr., City of Newark, U-126 (3), Essex Co. Bids Jan. 27. CD 1/30, under LB.
▲ **MARYLAND**—State Rds. Comm., 108 E. Lexington St., Baltimore, Zone 2,
American Bridge Div., U. S. Steel Co., Federal Land Bank Bldg., Baltimore, Md. CA $1,323,317. deck steel plate girder bridge superstructure over Potomac River, 20 spans, 2,425 lin. ft., Brunswick, Contr. F 507-4-714, Frederick Co. CD 1/21, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Peckman & Rosenblum**, c/o Kenneth Kruchten, archt., 108 John St., Garden City, N. Y. Owner Builds. $2,000,000. 300 HOUSES, tract on Shinnecock Bay, EAST QUOGUE, N. Y.
▲ **Schneider & Powell**, c/o Samuel Paul, archt., 153-18 Jamaica Ave., Jamaica, N. Y. Owner Builds. $4,800,000 300 HOUSES, 68-acres, Clinton Rd., GARDEN CITY, N. Y.
▲ **Lee Schoenfield & Alexander Muss**, c/o Oscar I. Silverstone, archt., 153 Pierrepont St., Brooklyn 2, N. Y. Owner Builds. $2,500,000. SHOPPING CENTER South Oyster Bay and Woodbury Rds. to be called Great Midway Shopping Center, HICKSVILLE, N. Y.
▲ **Gotham Constr. Corp.**, 501 Fifth Ave., New York 17, N. Y., CA $1,479,800, Public SCHOOL 191, Amsterdam Ave., 60 and 61 Sts., Manhattan Boro, NEW YORK, N. Y. Co-ordinator of School Contr., 49 Flatbush Ave. exten., Brooklyn 1, N. Y. Bids. Dec. 1 CD 12/16, under LB.
▲ **Frank & Francis Lewis**, c/o Karl Bloch, archt., 7 Landsdown Ave., Merrick, N. Y. Owner Builds. $3,000,000. 300 HOUSES, near railroad station, OCEANSIDE, N. Y.
▲ **Ragnar Benson, Inc.**, 239 Fourth Ave., Pittsburgh 22, Pa., CA $2,000,000. PARTS DEPOT WAREHOUSE and OFFICE, PITTSBURGH, PA. Ford Motor Co., 3000 Schaefer Rd., Dearborn, Mich. Austin Co., 16112 Euclid Ave., Cleveland, O., engr.—archt. Bids Jan. 21, awarded Jan. 23.
▲† **Baltimore Contractors, Inc.**, 711 S. Central Ave., Baltimore, Md. LB $1,043,300. 3 story, 61x166 ft. rein.-con., steel LABORATORY and ENGINEERING for development and proof service, incl. 1 story, 133x148 ft. front central unit wing, 1 story, 80x140 ft. rear central, 2 story, 70x130 ft. rear bldg., Eng. 18-020-53-44, ABERDEEN PROVING GROUND, MD. U. S. Eng., 24 St. and Maryland Ave., Baltimore, 3, Md. Elkan Wiley Groll, 1830 Jefferson Pl. N.W., Wash., D. C., archt. Bids Jan. 27. CD 1/14.
▲ **E. I. du Pont de Nemours & Co., Inc.**, du Pont Bldg., Wilmington, 98, Del. Own Forces. $15,000,000. titanium sponge PLANT addns., NEWPORT and EDGE MOOR, DEL. CD 10/23.

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000.

Classes of Construction

(Name in order of Listing)

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Latin America
Public Buildings
Commercial Buildings
Industrial Buildings
Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.
BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.
LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects invloved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over.
B.A. Bids Asked
ENR Engineering News-Record
CD Engineering News-Record Construction Daily

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

N. C., Lexington—NATURAL GAS SYSTEM—B.A. 3/16—City, natural gas sys. $960,000. Plans deposit $15. Porter, Barry & Assoc., 1730 Main St., Baton Rouge, La., engrs. CD 1/27.

BIDS ASKED—BUILDINGS

▲ **Ala., Fort McClellan**—HOUSING—B.A. 2/27—U. S. Eng., South Atlantic Div., P. O. Box 1889, Atlanta, Ga., construct, manage and finance 175 Wheery Act Housing units, $1,500,000.

▲ **S. C., Charleston**—DORMITORY—B.A. 3/6—Medical College of South Carolina, Charleston, dormitory, $1,000,000. Plans deposit $35. Hopkins, Baker & Gill, Florence, archts. CD 7/2.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Brown Coble Constr. Co.**, Lexington, N. C. CA $1,538,200, auxiliary for Marine Corps Air Station, NOY 70720, WILMINGTON, N. C. Dpt. Navy, Officer in Charge of Construction, Box 365, Naval Base, Charleston, S. C. Bids Jan. 18. CD 1/20, under LB.

† **Cherokee, Inc.**, P. O. Box 1276, Columbia, S. C., CA $892,650, grading, paving addnl. aircraft parking aprons and taxiways at Charleston Air Force Base, Inv. 53-16, CHARLESTON, S. C. U. S. Eng., Customhouse, Charleston, S. C. Bids Jan. 20. CD 6/17, under LB.

▲† **Ivey Bros. Constr. Co.**, 3224 Peachtree Rd., Atlanta, Ga., LB $1,099,746, maintenance hangar at Shaw Air Force Base, ENG 38-081-53-14. SUMTER, S. C. U. S. Eng., Customhouse, Charleston, S. C. Bids Jan. 29. CD 1/16.

▲ **FLORIDA**—State Hy. Dpt., Tallahassee, rejected bids Dec. 19, superstructure for Myrtle Ave. Overpass in Jacksonville, on State Road 5, UI003-7 (6), Duval Co., LB, $2,005,988. CD 12/29, under LB.

▲† **Henry C. Beck Co.**, First National Bank Bldg., Atlanta, Ga., LB, $1,493,557, maintenance hangar at Naval Air Station, NOY 71540, KEY WEST FLA. Dpt. Navy, Officer in Charge of Construction, Box 365, Naval Base, S. C. Bids Jan. 27. CD 1/12.

Nashville Gas Co., 800 Church St., Nashville, Tenn. Owner Builds. $873,000. 1953 natural gas lines project. NASHVILLE, TENN. CD 1/12/50.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Farnsworth & Chambers Co.**, P.O. Box 74, Houston, Tex., CA. $7,933,603, 1,000 HOUSING units, 139-acre tract, ATLANTA, GA. Atlanta Housing Auth., Trust Co. of Georgia Bldg., Atlanta, Ga. Bids Jan. 27. CD 1/29, under LB.

▲ **Jordan Contg. Co.** Andrews Rd., Columbus, Ga., Owner Builds. $5,000,000. 300 RESIDENCES, COLUMBUS, GA.

▲ **Southern Builders**, 1169 Jefferson St., Memphis, Tenn., CA. $1,200,000. APARTMENT, MEMPHIS, TENN. Rosalie Realty Co., c/o contractor.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

▲ **O., Cleveland**—B.A. 2/19—City, City Hall, Zone 14, reconstr. W. 25 St. Bridge over Train Ave., incl. 100 ft. new concrete paving at each end. $1,250,000. Plans deposit $50. John Heffelfinger, city bridge engr. CD 5/1.

▲ **O., Cleveland**—RAPID TRANSIT SYSTEM—B.A. 3/11—Cleveland Transit System, 1404 E. 9 St., Zone 14, East Sect. and part of West Sect., rapid transit routes, east; East Cleveland to Union Terminal limits; west: W. 102 St. to W. 117 St. $3,500,000. Morse W. Rew, c/o owner, engr. CD 9/11.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MICHIGAN—State Hy. Dpt., Charles M. Ziegler, comr., 222 Townsend St., Lansing, Zone 13.

L. A. Davidson Co., 213 E. St. Joseph St., Lansing, Mich. CA $988,345, est. $1,040,000. two concrete, steel bridges 7-span and 3-span M-46 and M-47 over Tittabawsee and East Tittabawsee Rivers, F B1 and B2 of 73-20-20-C1, Saginaw Co. CD 1/27, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **George A. Fuller Co.**, Fuller Bldg., Madison Ave. and 57 St., New York, N. Y. CA. $3,870,748. 5 story, 200-bed brick, stone HOSPITAL, Lorain Ave. at Rocky River Valley, CLEVELAND, O. Bd. Trustees, Fairview Park Hospital, 3305 Franklin Blvd., Cleveland, O. Awarded Jan. 29. CD 11/5.

▲ **Eastgate Plaza, Inc.**, 1010 Euclid Bldg., Cleveland 14, O. Owner Builds. $3,000,000. 36 unit brick stone SHOPPING CENTER, 50-acre site at Mayfield and SOM Center Rds., MAYFIELD HEIGHTS, O.

▲ **J. W. Snyder Co.**, 307 N. Michigan Ave., Chicago, 1, Ill., CA. $2,000,000, HIGH SCHOOL, GYMNASIUM FACULTY HOUSE, CHAPEL, Belmont and Austin Aves., CHICAGO, ILL. St. Patricks Academy for Boys, 122 S. Des Plaines St., Chicago, Ill. Bids Dec. 22, awarded Jan. 23. CD 12/10.

▲ **Carroll Constr. Co.**, 333 N. Michigan Ave., Chicago, 1, Ill., CA, $1,125,000, Men's HOME, EVANSTON, ILL. James C. King Home of Old Men, 360 E. Garfield

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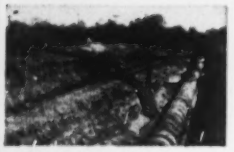

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Blvd., Chicago, Ill. Bids Dec. 23, awarded Jan. 26. CD 12/18.

▲ **A. W. Kutsche & Co.**, 2924 W. Grand Blvd., Detroit, Mich. CA $5,659,000. Edward J. Jeffries HOMES, five 14 story, brick, steel housing apartments, 560 family units, Willis, Canfield, Gibson and Lodge Expressway, Bid Area 4, Proj. Mich. 1-7A, DETROIT, MICH. Detroit Housing Comn., 409 Griswold St., Detroit, Mich. CD 1/13, under LB.

Harry Slatkin Builders, Inc., 11534 Dexter St., Detroit, Mich. CA Est. $600,000. 55 brick, single ranch HOMES, Main, Normandy and Chippewa Sts., ROYAL OAK, MICH. Slater Realty Co., 19911 Evergreen St., Detroit, Mich.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Western Contg. Corp.**, 400 Benson Bldg., Sioux City, Ia., The Massman Constr. Co., 20 W. 9 St., Kansas City, Mo. and The J. A. Jones Constr. Co., 209 W. 4 St., Charlotte, N. C. LB, $17,525,046. Est. $18,764,799, powerhouse substructure, the spillway (complete) and balance of earthwork, for stage II, Gavins Point Proj. near Yankton, Inv. 25-066-53-155, SOUTH DAKOTA. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Jan. 30. CD 12/8.

† **Geo. Bennett Constr. Co.**, 1520 Central Ave., Kansas City, Kan. CA. $927,263. est. $974,351. restore Armourdale levee on Kaw River, Part II Sect. 3, Kansas City, Wyandotte Co., CIVENG 23-028-53-104, KANSAS. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Dec. 30, awarded Jan. 26. CD 12/9.

OKLAHOMA—State Hy. Dpt., Capitol Office Bldg., Oklahoma City,

Banta Constr. Co., 1653 W. Main St., Oklahoma City, Okla., CA. $72,589, est. $89,257, seeding and sodding 34 mi. State highway shoulders, Garfield Co.; CA. $85,784, est. $114,793, shoulder seeding and sodding 45 mi. on highways, Pottawatomie Co.;

S. E. Evans Co., Fort Smith, Ark., CA. $117,377, est. $181,081, roadbed 2.85 mi. U.S. 69, Muskogee Co.; CA. $72,647, est. $85,495, grade, drainage 1.99 mi. U.S. 271, Leflore Co.;

M. E. Gillioz, Monett, Mo., CA. $199,446, est. $209,006, 0.547 mi. four-lane pavement U.S. 75, Washington Co.; CA. $356,895, est. $358,802, 2.72 mi. four-lane pavement U.S. 75, Washington Co.; CA $62,369, est. $64,674, 0.13 mi. four-lane paving, Osage Ave., Washington Co.;

Myron Groseclose, Bethany, Okla., CA. $245,420, est. $268,770, 0.85 mi. four-lane paving U.S. 77 in Ardmore, Carter Co.;

Lyles & Buckner, Surety Bldg., Muskogee, Okla., CA. $295,930 est. $296,728. c. conc. 2.83 mi. U.S. 69, Muskogee Co.;

Ray W. Lynch, 2115 N.W. 20th St., Oklahoma City, Okla., CA. $72,590, est. $39,864, seeding and sodding 13 mi. state highway shoulders, Lincoln Co.;

Smith Bros., Noble, Okla., CA. $90,881, est. $105,363. rock asph. paving 1.99 mi. U.S. 271, Leflore Co.;

W. E. Steelman, 2800 N.E. 4 St., Oklahoma City, Okla. CA. $286,366, est. $344,712, grading, paving 2.91 mi. U.S. 270 Seminole Co.;

Sawallisch Constr. Co., 1205 S. Ellison St., El Reno, Okla., CA. $167,915, est. $190,144, roadbed and paving 2.37 mi. State Hy. 77-A, Carter Co. Grand total $2,126,209. Bids Jan. 27, awarded Jan. 28. CD 1/15.

BUILDINGS

LOW BIDS AND CONTRACTS

Bartlesville Home Builders Assn., 102 East Dr., Bartlesville, Okla., Owner Builds. $800,000. constr. 800 HOMES and SHOPPING CENTER, BARTLESVILLE, OKLA. Treat Eng. Co., Plaza Court Bldg., Oklahoma City, Okla., land planning engr.

Jack A. Walsh, 224 Westchester St., Corpus Christi, Tex., CA. $751,000. 1 story 73,000 sq. ft. municipal AUDITORIUM, CORPUS CHRISTI, TEX. City, City Hall, Corpus Christi, Tex. Bids Jan. 20. CD 1/27, under LB.

Starling Constr. Co., Burnet Rd., Austin, Tex. CA. $829,000, JUNIOR HIGH SCHOOL, VICTORIA, TEX. Victoria Independent School Dist., Victoria, Tex. Bids Jan. 20. CD 1/26, under LB.

FAR WEST

SOON LETS CONTRACT—BUILDINGS

▲† **Ariz., Phoenix**—PLANT—Reynolds Metals Co., Reynolds Metals Bldg., Richmond 19, Va., plant for 2 aluminum extrusion presses for the Air Force. $21,000,000 with equipment. J. Gordon Turnbull, Inc., 2630 Chester Ave., Cleveland 14, O., engr. CD 11/18, under Industrial Buildings.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Statewide Plumbing & Heating Co., Inc.**, 1706 N. Main St., Pocatello, Idaho, CA. $814,000. Sanitary sewer extens., betterments and outfall sewer to treatment plant;

Ellis W. Barker Co., Ness Bldg., Salt Lake City, CA $406,163, sewage treatment plant, MURRAY, UTAH. City, c/o J. Clifford Hansen, mayor, City Hall, Murray, Utah. CD 12/3, under LB.

WASHINGTON—State Hy. Dpt., Olympia,

T. Scalzo, 3211 Airport Way, Seattle, Wash., CA, $365,264, clearing, draining grading steel girder railway undercrossing 1.92 mi. Primary State Hy. 1, Marshall Road north;

Guy F. Atkinson Co., 5315 N.E. 101 Ave., Portland, Ore., LB, $589,992, draining, grading 1.4 mi. Hy. 1 from Snohomish River bridge to Great Northern Ry. overcrossing Snohomish Co. Bids Jan. 27. CD 1/14.

WASHINGTON—State Hy. Dpt., Olympia,

Northwest Constr. Co., 3950 6 Ave. N.W., Seattle, Wash., CA, $496,366, clearing, draining grading 4.7 mi. Hy. 1 Maytown south Federal Aid, Thurston Co. Bids Jan. 27. CD 1/15.

▲ **Charles J. Dorfman**, 124 N. LaBrea Ave., Los Angeles, Calif., LB. $1,153,161, sanitary sewer, pump station and appurtenances, MIDWAY CITY, CALIF. Midway City Sanitary Dist., 14842 Monroe St., Midway City, Calif. Bids Jan. 22. (Correction—name of contractor). CD 1/29, under LB.

† **Malvern & Nicklas**, 3411½ N. La Brea St., Los Angeles, Calif., CA, $575,014, aircraft and supply warehouse and Q.M. warehouse, Edwards Air Force Base, ENG 04-353-53-70, MUROC, CALIF. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Jan. 23, awarded Jan. 26. CD 12/30.

BUILDINGS

LOW BIDS AND CONTRACTS

† **Ford J. Twaits Co., Morrison-Knudsen Co., Macco Corp.**, 449 S. Beaudry St., Los Angeles, Calif., CA, $648,870, addnl. BLDGS. (second increment), Marine Training Center, NOY 74046, Spec. 35111, TWENTY-NINE PALMS, CALIF. Dpt. Navy, San Diego, Calif. Bids Dec. 11, awarded Jan. 26. CD 12/22, under LB.

CANADA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Crown Paving Co., Ltd., 7 104 Ave. Edmonton, Alta., CA, $977,602, Street Paving, Contract No. 59, 182,000 sq. yds. paving, 85,000 lin. ft. curb, gutter; 57,000 cu. yds. excav. EDMONTON, ALTA. City, Civic Block Edmonton, Alta. Bids Jan. 22.

Grant Constr. Co., Ltd., 26 Queen St. E., Toronto, Ont., CA, $681,800, supply, install 48 in. steel water main from Parkdale Pumping Station to Indian Rd. Crescent and Humberside Ave., TORONTO, ONT. City, City Hall, Toronto, Ont. Bids Dec. 16. CD 12/23, under LB.

A. Janin & Co., Ltd., 1460 Sherbrooke St. W., Montreal, Que., CA, $500,000, standard drill and recreation hall, R.C.A.F. Station, Job 2260, BAGOTVILLE, QUE. Defence Constr. Ltd., 1247 Guy St., Montreal, Que. Bids Nov. 25. CD 10/30.

ALASKA

BIDS ASKED—HEAVY CONSTRUCTION

▲† **Alaska**—HOSPITAL—B.A. 2/6—U. S. Eng., 3013 Arcade Bldg., Seattle 1, Wash., 7 story, 173x172 ft., 40x366 ft., and 87x108 ft., rein.-con. hospital Elmendorf Air Force Base, Inv. ENG 95-507-53-34. $9,800,000. Plans deposit $50. Extended date. CD 12/17.

PUERTO RICO

BIDS ASKED—HEAVY CONSTRUCTION

† **Puerto Rico, Aguadilla**—LABORATORY—B.A. On Or About 3/18—U. S. Eng., P. O. Box 4970, Jacksonville, Fla., 1 story, approx. 37,700 sq. ft., rein.-con., concrete block reconnaissance technical laboratory, Ramey Air Force Base, Serial No. ENG 08-123-53-54.

Proposed Projects

WATER SUPPLY

▲ **N. C., Greensboro**—City, WW imprvs., $1,400,000. Wm. C. Olsen & Assoc., 5 Exchange Pl., Raleigh, consult. engrs. CD 12/23.

O., Cleveland—City, City Hall, Zone 14, 12,600 ft. 30, 36, 42 in. concrete, c.i. or steel water main in Northfield Rd., Maple Heights, Warrensville Heights, $800,000. Frank J. Schwemler, city comr. of utilities engr. CD 12/10/43.

SEWERS, WASTE DISPOSAL

▲ **Calif., San Mateo**—City, City Hall, $1,200,000 bond election Apr. 7, sewerage system imprvs.

▲ **Calif., Sunnyvale**—City, City Hall, bond election Apr. 6, $1,500,000, sewage treatment plant on Guadalupe Slough. CD 12/16.

Ky., Mayfield—City, sanitary sewer, sewage treatment plant, imprvs. $675,000. Russell & Axon, 408 Olive St., St. Louis, Mo., consult. engrs.

Mass., Beverly—Cities and Towns of Beverly, Danvers, Marblehead and Peabody, c/o Robert E. Layton, town mgr., Sylvan St., Danvers, incinerator, $500,000.

Mich., Kalamazoo—City, Dpt. P. Wks., sewage plant, disposal plant, treatment facilities, appurtenances, etc. $500,000. Jones, Henry & Schoonmaker, Security Bldg., Toledo, O., consult. engrs. CD 10/26/44.

Tenn., Dyersburg—City, sewage disposal plant and sewer lines addns. $750,000.

▲ **Tex., Alexandria**—City, City Hall, storm drain constr. $500,000; incinerator and sewage disposal, $750,000.

▲ **Va., Hopewell**—City, sewage disposal plant. $1,000,000. CD 8/10/50.

B. C. Burnaby—District of Burnaby, C. B. Brown, clk.-treas. Burnaby. Glenbrook trunk sewer extension in Edmonds area. $787,000. CD 9/7/48.

BRIDGES

Tex., Houston—Houston Belt & Terminal Ry. Co., H. L. Sandel, ch. engr., Union Station Bldg., Zone 2, constr. Cloverleif Overpass over Old Spanish Trail between McGregor Park and Brays Bayou. $550,000.

STREETS AND ROADS

ALABAMA—State Hy. Dpt., Montgomery,
Montgomery Co.—Southern By-Pass of city of Montgomery to connect Troy and Mobile Highways $750,000. CD 12/18/51.
▲ Fla., Miami—Dade Co. Ports Auth., Court House expressway from Miami International Airport into downtown area. $12,000,000. Earl Rader, Court House, co. engr.
Mich., Grand Rapids—Bd. Road Comrs. Kent. Co., reconstr., blacktopping county primary roads, $950,000
▲ Mo., St. Louis—City, Frank J. McDevitt, pres., Bd. P. Service, 304 City Hall, 12 and Market Sts., Zone 3, Market St. cut-off to connect Express Hy. to Market St., incl. overpass spanning Wabash R.R. tracks west of Vandeventer Ave. $3,536,000. CD 8/10/44.
Va., Alexandria—City, City Hall, street constr. $500,000.

EARTHWORK, WATERWAYS

▲ Calif., Napa—Napa Co., Court House, defeated $3,000,000 bonds, Coyote Valley Dam. CD 12/19.
† Illinois—U. S. Eng., 420 Locust St., St. Louis 3, Mo. levee to protect 2,440 acres land in Monroe Co. from floods on Mississippi River and Columbia Creek extending from lower end of levee of Prairie du Pont Levee and Sanitary District about 2.5 mi. on Mississippi River and then 2.4 mi. on north shore of Columbia Creek in Fish Lake Drainage & Levee District, Monroe Co. $931,000. CD 4/22/44.
▲ Alaska—U. S. Eng., 4735 E. Marginal Way, Seattle 4, Wash., diversion dam across Chena River, excavated channel from Chena to Tanana River, control structure to regulate flows in the Chena, 12 mi. levee and necessary drainage facilities. $7,646,000.

AIRPORTS

▲† Ill., Scott Air Force Base—HANGARS, etc.—U. S. Eng., Merchandise Mart, Chicago 54, maintenance hangars and shops for increase facilities, $1,480,000; sewage treatment plant, roads parking areas and dental clinic, $1,626,000. CD 6/29/51.
▲ Tex., Dallas—AIRPORT—City, City Hall, Main and Harwood Sts., voted $12,500,000 bonds Jan. 27, imprv. Love Field. CD 1/8.
▲† Wash., Spokane—SANITARY SEWERS, etc.—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, sanitary sewers, water pump and pumphouse and electrical and steam distr. systems, $1,000,000, H. J. Reeves, Symons Bldg., consult. engr.; plans by Whitehouse & Price, Hutton Bldg., communication facilities with air-ground radio station $300,000; plans by Bishop, Wulff Ritter & Gessel, W1526 Riverside St., 2 story, 12,000 sq. ft. headquarters bldg. addn., Inv. 53-108. $300,000, Fairchild Air Force Base. CD 10/31/51.

LATIN AMERICA

▲ Brazil—Alto Rio Grande Electric Co., Itutinga, plans several main sub-stations and main and secondary transmission lines, Itutinga, State of Minas. $5,000,000.
▲ Brazil, Rio de Janeiro—The National Alkali Co., Rio de Janeiro, plans soda ash and caustic soda plant, Cabo Frio. $15,000,000.
▲ Mexico, Mexicali—State Govt., Palacio del Estado, Mexicali, B. C., plans 1,000-home colony. $2,000,000.
Mexico, Mexicali—State Govt., Palacio del Estado, Mexicali, B. C., plans sewerage. $700,000.

PUBLIC BUILDINGS

▲† Ala., Anniston—ADMINISTRATION, etc.—U. S. eng., P. O. Box 1169, Mobile, plans by Shaw & Renneker, 2021 6 Ave. N., Birmingham, administration bldg., cafeteria and 8 shop buildings Anniston Ordnance Depot, $1,000,000. CD 9/8/51.
▲ Ala., Mobile—HOSPITAL—Alabama State Mental Institution Bd. State Capitol, Montgomery, 6 Searcy State Hospital buildings. $9,735,000.
▲ Ala., Tuscaloosa—T.B. BLDG., etc.—Alabama State Mental Institutions Bd., State Capitol, Montgomery, T.B. bldg. and 2 dormitories, Partlow State Hospital. $2,688,000. CD 7/18.
▲ Ark., Little Rock—SCHOOLS—Little Rock School Dist., City Hall, $4,000,000 bond election Mar. 21, school imprvs. Extended bond election date. CD 1/16.
▲ Calif., Corona—SCHOOLS—Corona School Dist., Corona, $1,525,000 bond election Feb. 20, schools. CD 11/19.
Calif., Garden Grove—SCHOOL—Garden Grove School District, Garden Grove, $840,000 bond election Feb. 20, expanding school facilities.

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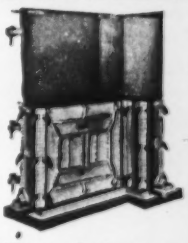

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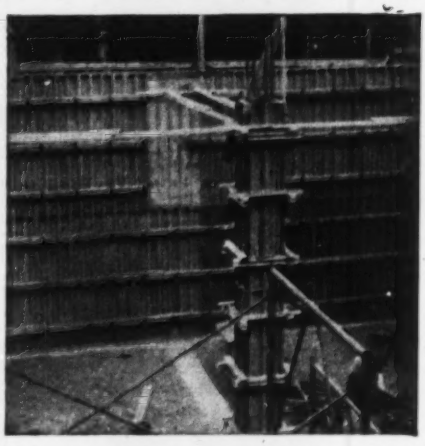

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Calif., Piedmont—SCHOOL, etc.—Piedmont City Unified School Dist., 800 Magnolia St., $775,000 bond election Apr. 21, elementary school and other imprvs.

▲ **Calif., San Jose**—HOSPITAL—Santa Clara Co., Court House, plans by Binder & Curtis, 35 West San Carlos St., San Jose, and Stone & Mulloy, 619 California St., San Francisco, hospital addn. $1,000,000. CD 1/2/17.

▲ **Conn., Bridgeport**—SCHOOL—City Bd. Educ., 840 Main St., plans by Toby Vece, 121 Wall St., Samuel Johnson Elementary School, Chopsey Hill Rd., north of Trumbull Rd., $1,150,000. CD 7/11.

▲ **Conn., Groton**—SCHOOL—Town, R. S. Haggard, Dist. Selectmen, Town Hall, Senior High School, $1,080,000.

▲ **Conn., Norwalk**—SCHOOLS—City, Wm. J. Creagh, clk., City Hall, Junior High School, W. Rock Ave. $500,000; Senior High School, western part of city, $700,000 CD 10/9/50.

▲ **Conn., West Hartford**—SCHOOL—Town, Supt. Schools, 51 Memorial Rd., elementary school, Braeburn Rd., $1,248,000.

▲ **Conn., West Haven**—SCHOOLS—Town Bd. Educ., H. M. Bailey, chn., Junior High School, $1,500,000; Seth G. Haley School addn., South St., $300,000; elementary school Platt Ave. and Jones Hill Area, $300,000. CD 8/25/49.

▲ **Fla., Jacksonville**—COUNTY OFFICE—Comrs. Duval Co., Court House, county office bldg. $1,000,000.

▲ **Fla., Lakeland**—HOSPITAL—City, City Hall, Morrell Hospital addn. $1,200,000.

Fla., Sarasota—HOSPITAL—City, City Hall, voted bonds, hospital. $750,000. CD 2/21.

▲ **Ill., Mattoon**—HOSPITAL—Coles County Hospital Dist., Mattoon, hospital. $1,200,000. Consoer, Townsend & Assocs., 361 E. Ohio St., Chicago, Zone 11, consult. engrs.

▲† **Ill., Macomb**—ASSEMBLY PLANT—Atomic Energy Comm., 1901 Constitution Ave. N.W., Wash., D. C., Illinois weapons assembly plant on Spoon River, 18 mi. from here. $29,000,000. Fluor Corp., Ltd., 2500 Atlantic St., Los Angeles, Calif., engr.-archt.

▲ **Ill., Streator**—SCHOOLS—Bd. Educ. Streator, voted $1,600,000 bonds, Junior High Schools. Wm. B. Ittner, Inc., 408 Bd. Educ. Bldg., 911 Locust St., St. Louis, 1, Mo., archt.-engr. CD 12/17/47.

▲ **Ind., Peru**—LIGHT PLANT, etc.—City of Peru, Municipal Light & Power Plant, Peru, expanding light plant, incl. 1500 kwh turbine and boiler $2,700,000. CD 11/26.

▲ **Me., Augusta**—HOSPITAL BLDGS., etc.—State, Dpt. Institutional Service, State House, hospital bldgs., $1,000,000; male active treatment, $900,000; tuberculosis unit, $900,000; employees bldg., $300,000, State Hospital. CD 4/25/45.

▲ **Md., Annapolis**—SCHOOL—Anne Arundel Co. Bd. Educ., 207 Hanover St., plans by Harder & Dressel, Glen Burnie, 1 story, 70x735 ft. brick Junior Senior High School, 87x160 ft. auditorium, Brooklyn Park, $3,000,000. Jas. Posey & Assoc., 10 E. Pleasant St., Baltimore, mech. engrs. Van Renssealer Saxe, 1701 St. Paul St., Baltimore, structural engr.

▲ **Mass., Boston**—SCHOOLS—City, Dpt. School Bldgs., 26 Norman St., elementary school to replace Rice-Bancroft School, south end, $1,570,000; elementary school to replace Agassix School, Jamaica Plain, $1,200,000; Ellis Mendell Elementary School addn., 164 School St., Jamaica Plain, $300,000; elementary school to replace Henry Grew School, Hyde Park, $620,000.

Mass., Boston—SCHOOL—City, Dpt. School Bldgs., 26 Norman St., elementary school adjacent to Mission Church, Roxbury. $734,483.

▲ **Mass., Boston** — HOSPITAL — State, Dpt. Mental Health, 15 Ashburton Pl., plans by M. A. Dyer Co., 24 School St., medical and surgical bldg., Boston State Hospital, M-506, Dorchester. $3,500,000. CD 1/26/51.

Mass., Dover—SCHOOL—Towns of Dover and Sherborn, Regional School Plan Comn., S. W. Badger, Dover, and Mrs. V. B. Levya, Sherborn, masonry Regional Junior-Senior High School. $750,000.

▲ **Mass., North Brookfield**—SCHOOL—Town, T. Thompson, supt. Schools, elementary school. $1,000,000.

▲ **Mich., Detroit**—PARKING GARAGE—City, John D. McGillis, dir. Municipal Parking Auth., 5 story, rein.-con., steel parking garage, Randolph, Brush, Congress and Larned Sts., serving city and county. $1,500,000. George R. Thompson, city engr.

▲ **Mich., East Lansing**—LIBRARY—State, A. N. Langius, dir. State Bldg. Dpt., Lansing, plans by Ralph Calder, 1212 Kales Bldg., Detroit, first unit brick, steel library, Michigan State College, $1,000,000 total est. $4,000,000. CD 3/24/50.

▲ **Mich., Grand Rapids**—POWER PLANT—State, A. N. Langius, dir. State Bldg. Dpt., 1 story, brick, steel, concrete power plant, Michigan Veterans' Facility, $1,000,000.

▲ **Mich., Marshall**—COURT HOUSE—Bd. Supervs. Calhoun Co., plans by Lewis J. Sarvis, 258 Champion St., Battle Creek and Smith-Hinchman & Grylls, 800 Marquette Bldg., Detroit, brick, steel, concrete county court house, $1,250,000. CD 1/21.

▲ **Mich., Mount Pleasant**—HOSPITAL—State, A. N. Langius, dir. State Bldg. Dpt., Lansing, brick, steel hospital, Mount Pleasant State Home and Training School, $1,500,000.

▲ **Mich., Northville**—THERAPY—State, A. N. Langius, dir. State Bldg. Dpt., Lansing, occupational therapy unit, industrial therapy unit, warehouse and maintenance bldgs., Northville State Hospital, $3,750,000. CD 1/16/51.

▲ **Mich., Pontiac**—SERVICE—State, A. N. Langius, dir., State Bldg. Dpt., Lansing, service bldg., laundry and power facilities, Pontiac State Hospital, $1,100,000. CD 1/16/51.

▲ **Mich., Ypsilanti**—PHYSICAL EDUCATION—State, A. N. Langius, dir. State Bldg. Dpt., Lansing, physical education unit, Michigan State Normal College, $3,000,000. CD 3/26/43, under Michigan.

Mich., Ypsilanti—AUDITORIUM and CHAPEL—State, A. N. Langius, dir. State Bldg. Dpt., Lansing, brick, concrete auditorium and chapel, Ypsilanti State Hospital, $775,000. CD 1/16/51.

Minn., Barnesville—SCHOOL—Bd. Educ., Dr. A. C. Cyr, clk., plans by Armstrong & Schlichting, 5 E. 22 St., Minneapolis, school, alterations to existing bldg. $700,000.

Mo., Kirkwood (St. Louis 22 P.O.)—SCHOOL— Bd. Educ., Kirkwood School Dist. R-7, $1,250,000 bond election Feb. 24, schools, addns.

▲ **Mo., Springfield**—SCHOOL—Bd. Educ. Reorganized School Dist. R-12, voted $1,070,000 bonds schools, school addns., sites. CD 1/7.

Neb., Lincoln—HIGH SCHOOL—Bd. Educ., 720 S. 22 St., Millard Lefler Junior High School. $750,000.

▲ **N. Y., Ballston Lake**—HIGH SCHOOL—Burnt-Hills-Ballston Lake Cent. School Dist., Ballston Lake, plans by Ryder & Link, 122 Jay St., Schenectady, Junior-Senior High School. $1,980,000.

O., Brooklyn—SCHOOLS—Bd. Educ., 9700 Biddulph Rd., Cleveland, Zone 9, bond election April 7, elementary school and remodeling Brooklyn High School. $965,000. CD 1/6.

▲ **O., Lancaster**—SCHOOLS—Lancaster School Dist., Lancaster, $2,100,000 bond election Mar. 3, two Junior High Schools. Joseph Baker & Assoc., Newark, archts. CD 11/16/50.

Pa., Allentown—SCHOOL—Allentown School Dist., 31 S. Penn St., Muhlenberg School. $750,000.

▲ **Pa., Chambersburg**—HIGH SCHOOL—Chambersburg Area Joint School Auth., High School Bldg., plans by Lawrie & Green, 321 N. Front St., Harrisburg, Senior High School, $3,000,000. CD 3/11/46.

▲ **Tenn., Knoxville**—HOUSING—Knoxville Housing Auth., 1701 Jouroimon Ave., Lake area slum clearance housing, $5,000,000. Williams & Assoc., Goodwyn Institute Bldg., Memphis, consult. engrs.

Tenn., McMinnville—HOSPITAL—Warren Co., McMinnville, hospital, $750,000.

▲ **Tex., Sugarland**—CELL BLOCK, etc.—Texas State Prison Bd., State Bldg., Austin, Unit 1, construct number of block cell living quarters, $2,500,000; Unit 2, dining and allied bldg. units, $1,000,000, both at Eastham Farm. CD 1/24/51.

▲ **Va., Norfolk**—CIVIC CENTER—City, City Hall, civic center to initially include jail and police headquarters, $1,440,000 office bldg., $1,481,000; court house, $885,400. Donald R. Locke, c/o owner, planning engr.

▲ **Alta., Calgary**—HOSPITAL—General Hospital Bd., Dr. L. O. Bradley, Calgary, plans by Stevenson & Dewar, 340 7 Ave., 5-year program of hospital development, incl, new laundry, new nurses' residence Perly wing conversion and general hospital two 200-bed unit, etc. $3,000,000 CD 12/31.

▲ **Atla., Medicine Hat**—HOSPITAL—General Hospital Bd., City Hall, 80 bed hospital extension. $1,000,000. CD 11/11/48.

COMMERCIAL BUILDINGS

▲ **Calif., San Francisco**—APARTMENT HOUSES—Theodore G. Meyer & Sons, 200 Quint St., 2 apartment houses, Clay and Jones Sts. $2,000,000.

▲ **Conn., Middletown**—CAMPUS IMPRVS.—Wesleyan University, Dr. V. L. Butterfield, pres., University Dr., campus imprvs., college union, dormitories, chapel and theater alterations, auxiliary athletic field, music wing, Observatory Hill. $8,000,000.

▲ **Conn., Wethersfield**—SHOPPING CENTER—The Norfolk Co., Danbury, 2 story, 205,000 sq. ft. main bldg. and smaller buildings in shopping center, parking 44-acre tract, Berlin Turnpike at Jordan Lane. $2,500,000.

▲ **Ga., Atlanta**—HOTEL—Ansley Hotel, Forsyth St., hotel addn. $1,000,000.

▲ **Ind., Gary**—HOUSING, etc.—L. I. Combs & Son, 2645 Wabash St., housing and commercial center, 29-acre site. $11,000,000 ($6,500,000 1953).

▲ **Ky., Louisville**—CONVENTION and BANQUET HALL—J. Graham Brown, Brown Hotel, plans by Preston J. Bradshaw, 1800 Olive St., St. Louis, Mo., convert upper part of Scoop Theater into convention and banquet hall, remodel first floor of bldg. at 420 W. Walnut St., expansion of Cardinal Room and Kentucky Hotel Restaurant, $1,000,000.

▲ **Me., Portland**—SCHOOL—Maine School for Deaf, D. K. Sanders, supt., Spring St., School for Deaf, $1,790,000.

▲ **Minn., Robbinsdale**—SHOPPING CENTER—Miracle Mile Shopping Center, F. Ecklund, chn., Robbinsdale, shopping center between 41 Ave. and Lake Rd. on Hy. 52. $1,000,000.

▲ **Neb., Lincoln**—HOUSING—Lincoln Home Builders, Inc., 2263 Y St., plans by John O. & George R. Unthank, 527 Sharp Bldg., housing. $3,000,000.

▲ **Neb., Omaha**—SHOPPING CENTER—The Center, Inc., 42nd and Center Sts., plans by J. & G. Daverman Co., 924 Grandville St. S. W., Grand Rapids, Mich. and Kenneth C. Welch, Grand Rapids, Mich., shopping center, $1,500,000.

▲ **Neb., Seward**—PHYSICAL EDUCATION, etc.—Concordia Teachers College, Seward, physical education bldg., women's dormitory, high school educational bldg. and changes in athletic field. $1,000,000.

▲ **N. Y., Forest Hills**—APARTMENTS—Sam Lefrak, 97-27, 64 Rd., plans by George Miller, 19 W. 44 St., New York, Zone 36, 6 story apartment, Dartmouth St., east of Yellowstone Blvd., $1,400,000; 6 story apartment, Clyde St., east of 67 Ave. $1,200,000.

▲ **N. Y., Hempstead**—STORE—Ohrbach's, 841 Broadway, New York, Zone 3, department store, on site near here, $4,000,000.

N. Y., Jamaica—APARTMENT—Bertsan Building Corp., c/o Julius Fishkind, archt., 161-19 Jamaica Ave., 6 story apartment, 88 Ave. and 150 St. $800,000.

N. Y., New York—APARTMENT—Elbridge Realty Corp., 910 Sheridan Ave., Zone 56, plans by Albert Goldhammer, 6 Varick St., Zone 13, 6 story apartment, 235 St. between Riverdale and Cambridge Aves. $950,000.

▲ **O., Lyndhurst (Br. Cleveland)**—SHOPPING CENTER—Marvin Helf Builders, Inc., 10001 Carnegie Ave., Cleveland, shopping center 22½-acre site, Ford and Mayfield Rds. $3,500,000.

▲ **Tenn., Nashville**—HOSPITAL—Mid-State Baptist Hospital, 2000 Church St., plans by Hart, Freeland & Roberts, 3rd Natl. Bank Bldg., Hospital Wing No. 2. $1,250,000.

▲ **Tex., Freeport**—SHOPPING CENTER—W. M. Dickey, 2719 Westheimer St., Houston, enlarging 1st unit of Avalon Shopping Center, $1,000,000.

▲ **Tex., Houston**—HOTEL, OFFICES—C. Mike Murphy, 2348 Maroneal St., plans by Dixon & Greenwood, 2265 W. Holcombe St., 17 story bsmnt., 260 unit apartment hotel, $2,925,000; No. 1, 3 story office, $400,000; No. 2, 3 story office, $425,000; No. 3, 10 story bsmnt. office, $1,250,000, foregoing on W. Holcombe Blvd. CD 4/29.

▲ **Tex., San Antonio**—HOSPITAL—Santa Rosa Hospital, W. Houston and Santa Rosa Sts., plans by Phelps & DeWees & Simmons, 1501 Majestic Bldg., and Wm. R. O'Connell, 305 Perry-Brooks Bldg., 5 story, 120-room hospital addn. $2,000,000. Frank T. Drought, 117 W. Pecan St., consult. engr. CD 7/22.

▲ **Man., Winnipeg**—HOUSING—Owner, c/o Kurnarsky & Weinberg, archts., 43 Luxton Ave., housing development, Lanark St. $2,000,000.

▲ **Man., Winnipeg**—HOUSING—Owner, c/o F. A. Mager, 570 St. Mary's Rd., St. Vital, housing in St. Vital Suburban area on site bounded by Berrydale and Hull Aves., St. Mary's and St. Anne's Rd. $6,000,000.

▲ **Ont., Hamilton**—SHOPPING CENTER—Argus Corp. Ltd., 15 King St. W., Toronto, shopping center at site of former Hamilton Jockey Club track. $12,000,000.

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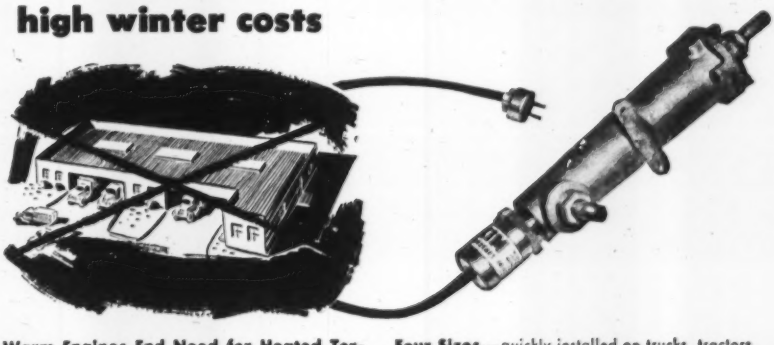

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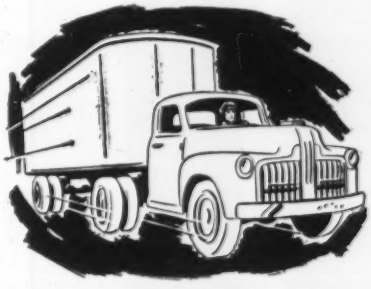

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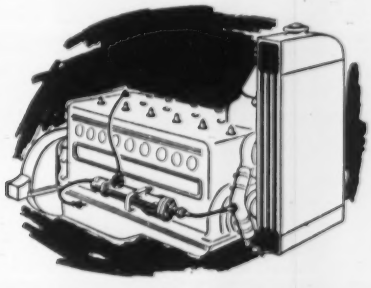

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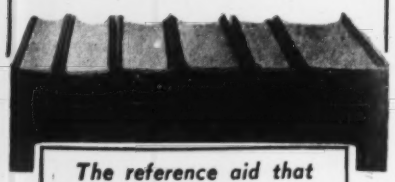

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Fla., Kissimmee—PLANT—Osceola Fruit Distributors, Kissimmee, rebuilding plant, $750,000.

▲ **Ga., Rome**—PLANT—Inland Container Corp., Macon, plant. $1,000,000.

▲ **Mass., Dedham** — INDUSTRIAL DEVELOPMENT — Owner, c/o Edward D. Hobbs & Co., 79 Milk St., Boston, industrial development incl. 1 and 2 story buildings, 20,000 to 200,000 sq. ft. each, between New York, New Haven & Hartford R.R. and Neponset River, $1,000,000.

▲ **Mass., Peabody**—INDUSTRIAL DEVELOPMENT—Owner, c/o Miss. Maloney Corp., 857 Commonwealth Ave., Boston, garden type industrial development bldgs., Peabody City Infirmary area, $4,000,000.

▲ **Minn., St. Paul**—LABORATORY—Minnesota Mining & Mfg. Co., 900 Fauquier Ave., 2 story, 275 ft. long, 100,000 sq. ft. E- shaped research laboratory, East Ave. and Hy No. 12, $3,000,000.

Mo., North Kansas City—PLANT—Percy Kent Bag Co., Inc., 715 Armour Rd., plans by Kivett & Myers, 1016 Baltimore St., Kansas City, Mo., and Angus McCallum, assoc. archt., 1016 Baltimore St., Kansas City, Mo., bag plant, $800,000.

▲ **O., Wickliffe**—FACTORY—International Paper Co., 220 E. 42 St., New York 17, N. Y., factory to mfg. milk containers, $1,000,000.

▲ **Tex., Beaumont**—PLANT, etc.—E. I. duPont de Nemours & Co., Orange, organic chemical plant unit to mfg. methionine, $4,000,000; warehousing or storage for chemical plant production, $200,000 on part of 562 acre tract 4 mi. east of here. CD 12/6/51.

Tex., Colorado City—REFINERY—Col-Tex Refining Co., Colorado City, refinery constr. $933,525.

▲ **Tex., Houston**—PRODUCE TERMINAL—Houston Belt & Terminal Ry. Co., H. L. Sandel, ch. engr., Union Station Bldg., Zone 2, produce terminal in 74-acre Industrial tract. $3,000,000.

▲ **Va., Glasgow**—PLANT—James Lees & Son, Glasgow, rug mfg. plant. $1,500,000. H. A. Kuljian Co., 1200 N. Broad St., Phila., Pa, consult. engr. (Correction—engineer). CD 11/13.

Va., Lynchburg—PLANT—Lynchburg Foundry Co., Lynchburg, plans by Giffels & Vallet, Inc., 1000 Marquette Bldg., Detroit, Mich., shell moulding plant. $750,000. CD 9/19.

▲ **Man., St. Boniface**—PETROLEUM CRACKING PLANT—North Star Oil Co. Ltd., Scott Block, Winnipeg, petroleum cracking plant 92-acre site Dawson Rd., $5,000,000. CD 2/14.

▲ **Ont., Simcoe**—MINING PLANT—Oliver Iron Mining Co., Wolven Bldg., Duluth 2, Minn., U. S. A., mining plant development, $1,000,000.

▲ **Ont., Simcoe**—PLANT—U. S. Steel Co., 525 Wm. Penn Pl., Pittsburgh, Pa., U.S.A., processing iron and steel plant, $1,000,000

▲ **Ont., Toronto**—FACTORY—George Weston Ltd., 25 King St. W., biscuit factory, $2,500,000 CD 2/13/45.

UNCLASSIFIED

▲ **Calif., Redwood City**—PORT FACILITIES—City, City Hall, $1,000,000 bond election Apr. 21, port facilities.

Mo., Kansas City—TELEVISION STATION, etc.—Empire Coil Co., Inc., Hubert Mayer, pres., Beachwood Ave. and Second St., New Rochelle, N. Y., television-UHP station and tower, $500,000.

Mo., Marshall—TELEVISION STATION—Missouri Farmers' Assn., c/o Radio Station KMMO, Marshall, will not construct television station, $596,000, Project abandoned, A. D. Ring & Co., Munsey Bldg., Wash., D. C., consult. engrs. CD 8/1/52.

▲ **Nebraska**—OIL PIPE LINES—Pure Transportation Co., Pure Oil Bldg., Chicago, Ill. 8 in. trunk oil pipe lines, Cheyenne and Kimball Counties. $1,000,000.

N. C., Lexington—NATURAL GAS SYSTEM—City, natural gas sys. $960,000. Porter, Barry & Assoc., 1730 S. Main St., Baton Rouge, La., consult engrs. CD 8/13.

▲ **Texas**—POWER LINE—Central Power & Light Co., 120 N. Chaparral St., Corpus Christi, electric power line from Edinburg to Laredo. $1,446,536. CD 1/17/50.

Tex., Houston — TELEVISION STATION — University of Houston (KUHT), 1500 Louisiana St., television station, $600,000. George P. Adair, 1610 I St. N. W., Wash. 6, D. C., consult. engr. CD 11/24

Tex., Odessa—PARKS—City, City Hall, and Ector Co. Odessa, construction and imprvs. parks, $750,000.

▲ **Tex., San Antonio**—ELECTRIC DISTRIBUTION LINES—City Public Service Bd., 201 N. St. Marys St., electric distr. lines extens., Northside, $475,000; electric distr. lines extens., Southside, $400,000; electric transformer unit Eastside, $225,000; some general repairs and rehabilitation to existing electric distr. sys., $275,000. V. H. Braunig, c/o owner, engr.

Tex., San Antonio—GAS MAINS—City Public Service Bd., 201 N. St. Marys St., natural gas mains on Northside, $350,000; some natural gas mains on Southside, $300,000; considerable general repairs and rehabilitation to existing gas distr. sys., $325,000; expansion into new areas of gas laterals distr. sys., $250,000. V. H. Braunig, c/o owner, engr.

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▲† **N. J., Wrightstown**—HEATING PLANT, etc.—B.A. 3/10—U. S. Eng., 121 N. Broad St., Phila., Pa., central heating plant and distr. sys. and paving, McGuire Air Force Base, ENG-36-109-53-427. $1,000,000. Extended date. American Hydrotherm & Adache & Case, 33-70 12 St., Long Island City, N. Y., archts. CD 1/28.

▲† **Pa., Phila.**—DRYDOCK—B.A. 2/26—Dpt. Navy, Phila., Naval Base, Dry Dock No. 1 reconstruction, Naval Shipyard, NOY 75486, Spec. 346364. $3,000,000. Harris-Dechant Associates, 124 S. Broad St., engrs.-archts. CD 7/10.

▲† **Pa., Willow Grove**—RUNWAY, etc.—B.A. 2/26—Dpt. Navy, Phila., Naval Base, Phila., Naval Air Station runway, airfield paving and utilities, NOY 73199, Spec. 34378, $2,655,300. Capitol Eng., Co., Dillsburg, engrs. CD 3/31.

▲† **N. J., Wrightstown**—B.A. 3/4—U. S. Eng., 121 N. Broad St., Phila., Pa., sewage treatment plant, pumping station and paving No. 36-109-53-421. $1,200,000. Extended date. Whitman, Requardt & Assocs., 1304 St. Paul St., Baltimore, Md., engrs. and archts. CD 1/23.

BIDS ASKED—BUILDINGS

▲† **Md., Camp Detrick**—LABORATORY—B.A. 2/17—U. S. Eng., First and Douglas Sts. N.W., Wash. 25, D. C., brick, concrete, block Plant Science Laboratory Bldg. C-1, Soils Preparation Laboratory Bldg. C-2B, $1,155,000. Plans deposit $25. H. K. Ferguson Co., 19 Rector St., New York, N. Y., archts. CD 1/7.

Pa., Newtown—HIGH SCHOOL—B.A. 2/19—Council Rock High School Auth., Newtown, Junior-Senior High School. $925,000. Heacock & Platt, 152 N. 15 St., Phila., archts. CD 1/20.

▲† **Pa., Phila.**—PROOF HOUSE—B.A. 2/25—U. S. Eng., 121 N. Broad St., small arms ammunition proof house, site imprvs. etc. at Frankford Arsenal, No. 36-109-53-364. $1,000,000. Extended date. George M. Ewing Co., Western Saving Fund Bldg., engr.-archt. CD 1/27.

▲ **Pa., Phila.**—HOUSING—B.A. 3/18—Phila. Housing Auth., 42 S. 15 St., Mill Creek Proj. $3,500,000. Kahn & McAllister & Day, 138 S. 20 St., archts. CD 10/6.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **A. Cestone**, 68 Tuxedo Rd., Montclair, N. J., and **Frank Stamato**, 284 Main St., Lodi, N. J., CA. $987,740, water distr. sys., McGuire Air Force Base, ENG. 36-109-53-245, WRIGHTSTOWN, N. J. U. S. Eng., 121 N. Broad St., Phila., 1, Pa. Bids Jan. 14. CD 1/22, under LB.

▲† **Arthur Venneri Co.**, 300 North Ave. East, Westfield, N. J., LB, $1,454,174, regimental headquarters bldg., classrooms, and storage buildings, McGuire Air Force Base, ENG 36-109-53-341, WRIGHTSTOWN, N. J. U. S. Eng., 121 N. Broad St., Phila., 1, Pa. Bids Jan. 30. CD 1/20.

▲† **T. C. Bateson Constr. Co.** Irwin-Keasler Bldg., Dallas, Tex., CA, $3,419,584. aircraft maintenance hangar, McGuire Air Force Base, ENG-36-109-53-230, WRIGHTSTOWN, N. J. U. S. Eng., 121 N. Broad St., Phila., 1, Pa. Bids Jan. 7. CD 1/20, under LB.

▲ **PENNSYLVANIA**—Pennsylvania Turnpike Comn., 11 N. 4th St., Harrisburg,

C. J. Langenfelder & Son, Inc., 8427 Pulaski Hy., Baltimore, Md., LB, $2,594,557, construct structures and grading, drainage, paving 3.62 mi. Sec. 33A, Delaware River Extens. of Pennsylvania Turnpike, Montgomery Co. Bids Feb. 3. CD 1/10.

▲ **Moyer Bros.**, 2605 Beale Ave., Altoona, Pa., CA. $1,048,000, sewage disposal plant, Schedule 3, ALTOONA, PA. Municipal Auth., City Hall, Pa. Bids Dec. 11. CD 12/23, under LB.

▲† **Lipsett Co., Inc.**, 210 S. 40 St., Phila., Pa., LB $1,480,112, aircraft maintenance shop and facilities, NOY 73198, Spec. 34377, Naval Air Station, WILLOW GROVE, PA. Dpt. Navy, Phila. Naval Base, Phila., Pa. Bids Jan. 27. CD 1/20.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Geo. F. Driscoll Co. & Moccia Constr. Co.**, 41 E. 42 St., New York, N.Y. LB $8,777,778, foundation and general constr.;

Harry Starkman & Bros, 348 Brook Ave., New York, N.Y., LB $1,008,000, heating and ventilating;

Herman H. Schwartz, Inc., 179 S. Portland Ave., Brooklyn, N.Y. LB $526,470, electrical work;

J. L. Murphy, Inc., 370 Jay St., Brooklyn, N. Y. $1,014,000, plumbing;

Seaburg Elevator Co., Inc., 243 44 St., Brooklyn, N.Y. LB $315,540 elevators, for Cypress Hills HOUSES (Proj. NYC 58-2), Sutter, Euclid, Blade Aves., Chestnut St., Dumont, Euclid Aves., Linden Blvd and Fountain Ave., BROOKLYN, N.Y. New York City Housing Auth., 63 Park Row, New York, Zone 38. Bids 2/3. CD 1/22.

▲ **Rosewood Gardens Homes**, c/o Stanley H. Klein, archt., 89-31, 161 St., Jamaica, N. Y. Owner Builds. $1,500,000. 125 HOUSES on 29-acre tract, on Merritt Rd., south of Hempstead Turnpike, FARMINGDALE, N.Y.

▲ **Grand Union Co.**, Paterson Ave., Carlstadt, N. J. Separate Contracts. $1,000,000. WAREHOUSE and GARAGE, WATERFORD N. Y. The Ballinger Co., 121 N. Broad St., Phila., Pa., archt.

▲ **Bordman-Smith Corp.**, 1325 W. Airdrie St., Phila., Pa., Separate Contracts, $2,500,000 MOTEL DEVELOPMENT, ATLANTIC CITY, N. J.

▲ **Bordentown Gardens, Inc.**, Bordentown, N. J., Separate Contracts, $1,550,000, RESIDENTIAL DEVELOPMENT, Georgetown Rd., BORDENTOWN, N. J. Dante J. D'Anastasio, 1815 Federal St., Camden, N. J., archts.

▲ **Bossert Estates**, 37 Collins Rd., Trenton, N. J., Separate Contracts, $7,000,000. RESIDENTIAL DEVELOPMENT, Crosswicks Rd., BORDENTOWN, N. J.

▲ **George Mittleman & Sons**, 4844 Bingham St., Phila., Pa., Separate Contracts, $5,500,000, RESIDENTIAL DEVELOPMENT, near Route 39, in Bordentown Twp., BURLINGTON, N. J. Dante J. D'Anastasio, 1815 Federal St., Camden, N. J., archts.

▲ **B. J. Lucarelli & Co., Inc.**, 22 Orchard St., Jersey City, N. J., CA, $1,864,000. 268 unit HOUSING, CAMDEN, N. J. Camden Housing Auth., City Hall, Camden, N. J. Bids Jan. 13. CD 1/22, under LB.

▲ **Friedman Brothers** c/o Percy Simon, archt., 362 Cedar Lane, Teaneck, N. J., Owner Builds. $1,500,000. 100 HOUSES on tract on Route 208, FAIRLAWN, N. J.

▲ **Haven Village Homes**, c/o Lester Cohen, archt., 41 Main St., Hackensack, N. J., Owner Builds. $3,500,000 385 HOUSES on 50 acre tract, SAYREVILLE, N. J.

▲ **Baton Constr. Corp.**, 1717 Sansom St., Phila., Pa. CA. $2,000,000. PHYSICS BLDG. and paving, PHILA. PA. University of Pennsylvania, 33rd and Walnut Sts., Phila., Pa. Bids Jan. 13. CD 1/6.

Turner Constr. Co., 1500 Walnut St., Phila., Pa., CA. $809,000, GARAGE, Walnut, 18 and 19 Sts. and roads and walks, PHILA., PA. Phila. Parking Auth., Packard Bldg., Phila., Pa. Bids Oct. 7. CD 10/29, under LB.

▲ **E. H. Keefer & Son**, 1321 Rodman St., Phila., Pa. LB $1,095,872, HOSPITAL addn., NURSES HOME and SCHOOL addn., POTTSTOWN, Pa. Pottstown Hospital, 724 N. Charlotte St., Pottstown, Pa. Bids Jan. 23. CD 1/22.

▲ **Pennsylvania Builders, Inc.**, Phoenixville, Pa., Separate Contracts, $1,113,000. RESIDENTIAL DEVELOPMENT, Ferry Lane, VALLEY FORGE, PA. Douglas Marsh Blum, Phoenixville, Pa., archt.

▲ **Blaw-Knox Co.** (Chemical Plants Div.), 930 Duquesne Way, Pittsburgh 22, Pa., CA. $1,000,000. design and construct high octane gasoline catalytic reforming PLANT, WARREN, PA. United Refining Co., Warren, Pa. CD 12/29.

▲ **George K. Heebner, Inc.**, 1231 Vine Sta., Phila., Pa., CA. $5,000,000. 10 INDUSTRIAL BLDGS., near WILLOW GROVE, PA. Philip S. Seltzer, Western Saving Fund Bldg., Phila. Pa., CD 1/21.

▲ **Dpt. Navy, Phila.** Naval Base, Phila., Pa. rejected bids Dec. 30, construct, manage, finance, Military HOUSING, Naval Air Station, WILLOW GROVE, PA. LB $1,116,000. Will re-advertise. CD 1/22, under LB.

▲ **Thompson-Starrett Co., Inc.**, 444 Madison Ave., New York, N. Y., CA, $3,250,000, 4 story, stone marble HEADQUARTERS, Delaware Ave. and N. Capitol St., WASH., D. C. Teamsters Union, American Federation of Labor, c/o Holabird-Root-Burgee, archts and engrs., 180 N. Wabash St., Chicago, Ill.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

February 18 Louisiana February 24 Mississippi

STREETS AND ROADS

February 18 Louisiana

▲ **Fla., Key West**—B.A. 3/6—City, City Hall, imprv. sewage collection system, lift stations, force mains, ocean outfall, $2,000,000. Clifford-Cooper & Assocs., 101 West Dr., Miami Springs, engrs. CD 1/26, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Roosevelt Contg. Co.**, c/o S. Waranch, Halprin Dr., Norfolk, Va., Owner Builds. Approx. $1,000,000. 120 one story frame, brick veneer RESIDENCES, NORFOLK, VA.

▲ **J. M. Turner & Co., Inc.**, 137 Campbell Ave. S.W., Roanoke, Va., LB. $1,007,000, 2 story, bsmnt., masonry HIGH SCHOOL, PULASKI, VA. Pulaski County School Bd., Pulaski, Va. Bids Jan. 29. CD 12/12.

▲ **Cecil's, Inc.**, Box 1895, Spartanburg, S. C., CA, $1,237,000, 210-unit HOUSING, ADMIN.-MAINTENANCE BLDG., ROCKY MOUNT, N. C. Rocky Mount City Housing Auth., Rocky Mount, N. C. Bids Dec. 2. CD 12/11, under LB.

▲ **Brown & Root**, 4100 Clinton Dr., Houston, Tex. CA $2,663,000. paper MILL, LOCKPORT, LA. Valentine Pulp & Paper Co., Lockport, La. Awarded Jan. 30.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

February 24 Wisconsin and Minnesota, Wisconsin February 25 Michigan

STREETS AND ROADS

February 24 Wisconsin February 25 Michigan

BIDS ASKED—BUILDINGS

▲ **O., Cincinnati**—RESIDENCES—B.A. 2/26—Cincinnati Metropolitan Housing Auth., 595 Armory St., 336 two-story bsmnt. frame residences, Beekman St. $3,600,000. Plans deposit $40. Extended date. Bernard Pepinsky, Union Trust Bldg., archt. Edward Larson, 2nd Natl. Bank Bldg., engr. CD 1/13.

▲ **O., Athens**—DORMITORIES—B.A. 2/27—Ohio University, Athens, 2 and 3 story bsmnt. brick, rein.-con. Dormitories 2 and 3, on Ohio University Campus. $1,000,000. Potter, Tyler, Martin & Roth, 35 E. 7 St., Cincinnati, archts.

▲ **O., Columbus**—CIVIC CENTER—B.A. 3/9—Franklin County Veterans Memorial Assn., 280 E. Broad St., steel, concrete, stone masonry civic center. $4,500,000. Extended date. CD 1/22.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Brookpark Industrial Shopping Center, Inc.**, c/o Lewis & Fink, 720 Euclid Ave., Cleveland 14, O. Owner Builds through J. Fred Meyer, 3584 Avalon Rd., Cleveland, O. $1,000,000. 1 story, steel, concrete FACTORY, W. 130 St. and Brookpark Rd., Brook Park, CLEVELAND, O.

▲ **The Austin Co.**, 16112 Euclid St., Cleveland, O. CA. Est. $1,000,000, design and construct, 1 story, steel, cement block FACTORY, NAPOLEON, O. Harris Products Co. (Clevite Corp.), 1929 E. 61 St., Cleveland, O. CD 2/2.

J. E. Merrion Co., 2015 E. 79 St., Chicago, Ill., Owner Builds, $900,000, 50 HOMES, W. 88 St. near Kostner and Keeler Sts., CHICAGO, ILL. Emil Minx, 5150 Dempster St., Skokie, Ill., archt. Awarded Jan. 26.

▲ **Hagstrom Constr. Co.**, 1567 Selby Ave., St. Paul, Minn., CA, $2,798,000. 360-unit HOUSING, incl. 43 buildings, PEORIA, ILL. Peoria Housing Auth., 22 Warner Homes Court, Peoria, Ill. Bids Nov. 5. CD 12/30, under LB.

▲ **Louis Home Builders**, 18037 James Couzens Hy., Detroit, Mich. Owner Builds. $3,000,000. 300 brick single ranch HOUSES, streets off West Chicago St., DETROIT, MICH.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

February 20 Kansas

STREETS AND ROADS

February 20 Kansas, North Dakota February 24 Iowa

BIDS ASKED—BUILDINGS

▲ **Tex., Baytown** — CHEMICAL PLANT — Bids Asked — Gulf Alkali Corp., 509 Madison Ave., New York, N. Y., chemical plant, near here. $8,000,000.

▲ **Tex., Goliad** PLANT, etc. Bids Asked—Goliad Corp., Goliad, propane gas plant unit, $1,000,000; iso-butane gas plant unit, $[illegible]; some general storage for gas products facilities, $200,000; general repair shop, $85,000. CD 12/31.

SOON LETS CONTRACT—BUILDINGS

Tex., Houston GARAGE—Medical Arts Building Corp., Medical Arts Bldg., soon lets contract, 9 story, bsmt., auto mechanical parking garage, Walker and Caroline Sts. $850,000. CD 1/27.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Fred Weber Contractor, Inc.**, 7929 Alabama Ave., St. Louis 11, Mo. CA. $1,067,199, est. $1,297,860. parking aprons, taxiways, Lambert-St. Louis Municipal Airport adjacent to new admin. bldg. on Natural Bridge Rd. near Brown Rd., St. Louis County, ST. LOUIS, MO. City, Frank J. McDevitt, pres. Bd. P. Service, 304 City Hall, 12 and Market Sts., St. Louis 3, Mo. CD 1/13, under LB.

▲ **Oklahoma Natural Gas Co.**, 624 S. Boston St., Tulsa, Okla., Own Forces, $2,250,000. 51 mi. 18 in. natural gas line from Sapulpa to Pryor, Creek Co. OKLAHOMA. Awarded Jan. 30. CD 9/3.

TEXAS—State Hy. Comn., Austin;

Cooper & Woodruff, 222 Mays Bldg., Amarillo, Tex., CA. $713,823, soil cement base and hot mix b. conc.

10.301 mi. Hy. U.S. 287, Proj. F 449 (5), Clay and Montague Counties Bids Jan. 13, awarded Jan. 22. CD 1/19, under LB.

▲ **Wilcox Trend Pipe Line Gathering System, Inc.,** c/o Harry Bass Drilling Co., Magnolia Bldg., Dallas, Tex. Own Forces. $10,000,000. 167 mi. of gas pipe line network gathering sys. vicinity of Cuero, TEXAS. CD 12/19.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Charles F. Curry & Co.,** 921 Baltimore St., Kansas City, Mo. CA 106 HOUSING units;

Winn-Rau Constr. Co., 7701 State Line, Kansas City, Mo. CA 100 HOUSING units;

Belvidere Constr. Co., Grandview, Mo. CA 100 HOUSING units;

J. E. Dunn Constr. Co., 929 Holmes St., Kansas City, Mo. CA 80 HOUSING units;

Robbins & Robbins, 349 Greeley St., Kansas City, Kan. CA 52 Negro HOUSING units;

Andes & Roberts Constr. Co., 430 Bellevista Dr., Independence, Mo. CA 40 HOUSING units;

Robt. Williams Real Estate Co., 2200 Prospect St., Kansas City, Mo. CA 26 HOUSING units;

Wm. Royster, Scarritt Realty Co., Scarritt Bldg., Kansas City, Mo. CA 25 HOUSING units;

J. A. Dunn & Dreier, 8032 Floyd St., Overland Park, Kan. CA 25 HOUSING units;

Robt. Barry Realty Co., 1505 Main St., Kansas City, Mo. CA 20 HOUSING units;

W. H. Barron & Son, Victor Bldg., Kansas City, Mo. CA 8 HOUSING units;

Wesley Elders, 2440 Wabash St., Kansas City, Mo. CA 6 HOUSING units, all foregoing in Jackson County;

Geo. Miller Realty Co., Victor Bldg., Kansas City, Mo. CA 100 HOUSING units;

H B C Development Co., Sedalia, Mo. CA 60 HOUSING units;

Byers & Daniels Constr. Co., Waldheim Bldg., Kansas City, Mo. CA 20 HOUSING units, all foregoing in Clay County;

Earl R. Baughar, Harrisonville, Mo. CA 20 HOUSING units, in Cass County. KANSAS CITY, MO. Federal Housing Admin., c/o J. Vivian Truman, dist. dir., 905 Walnut St., Kansas City, Mo. Total est. cost $6,000,000. Bids Jan. 12. CD 12/29.

▲ **Glenn & Robert Marcoe and Leonard & Stanley Olson,** Rapid City, S. D., Owner Builds. $2,000,000, 184 HOMES, South Canyon area, RAPID CITY, S. D.

J. W. Bateson Constr. Co., Irwin-Keasler Bldg., Dallas, Tex. CA. $818,050, W. H. Gaston Junior HIGH SCHOOL, DALLAS, TEX. Dallas Independent School Dist., 3700 Ross St., Dallas, Tex. Bids Jan. 12, awarded Jan. 29. CD 1/22, under LB.

Frank W. Sharp, 2202 Rosslyn St., Houston, Tex. Separate Contracts. $750,000. addnl. expansion of Oak Forest SHOPPING CENTER, HOUSTON, TEX. CD 1/30.

M. W. Kellogg Co., 225 Broadway, New York, N. Y., CA, $750,000, 700 bbl. per day alkylation unit at REFINERY, CASPER, WYO. Standard Oil Co. of Indiana, 910 S. Michigan Ave., Chicago, Ill. CD 8/12/48.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

February 25 California

STREETS AND ROADS

February 25, 26 California

▲† **Oregon**—B.A. 4/1—U. S. Eng., Pittock Block, Portland, Power House, Phase I, substructures for first 14 main units and service station units, complete assembly bay, The Dalles Dam, Wasco Co., Civeng 35-026-53-123. $40,000,000. CD 12/17.

BIDS ASKED—BUILDINGS

▲ **Calif., Los Angeles**—HOSPITAL WINGS—B.A. 2/26—Mount Sinai Hospital, 208 W. 8 St., two 6 story hospital wings on Beverly Blvd. between Robertson and La Cienega Blvds., $1,000,000. Welton Becket & Assocs., 5657 Wilshire Blvd., Los Angeles, and Palmer, Krisel & Lindsey, 827 Morago Dr., archts. CD 12/31/51.

▲ **Wash., Seattle**—DEPARTMENT STORE—B.A. 2/26—Allied Stores Corp., 401 5 Ave., New York, N. Y., 4 story, 231x350 ft., rein.-con. department store addn. atop present Bon Marche Structure. $3,500,000. John Graham & Co., Dexter Horton Bldg., Seattle, Zone 4, archts. CD 4/23.

▲ **Ore., Portland**—HOSPITAL—B.A. 4/1—State Bd. Higher Educ., Corvallis, 14 story, 231-bed teaching hospital, at University of Oregon Medical School. Lawrence, Tucker & Wallmann, Failing Bldg., archts. CD 8/19, under LB.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Bay Constr. Co. & Don L. Cooney Co.,** Airport Way and Holgate St., Seattle, Wash., CA. $816,139, constr. McNary powerhouse 230-kv lines No. 1 and 2 and McNary-Big Eddy 300-kv lines, 98.7 mi., Umatilla, Benton and Klickitat Counties, Inv. 6845. OREGON and WASHINGTON. Bonneville Power Admin., 827 N.E. Oregon St., Portland, Ore. Bids Jan. 13, awarded Jan. 27. CD 1/28, under LB.

▲ **Midway City Sanitary District,** 14842 Monroe St., Midway City, Calif., rejected bids Jan. 22, sanitary sewer mains, sewage pump station and appurtenances, MIDWAY CITY, CALIF. LB, $1,153,161. CD 2/2, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Bechtel Corp.,** 220 Bush St., San Francisco, Calif. CA. $20,000,000. design and construct nickel smelter PLANT for Hanna Coal & Ore Corp. and Hanna Nickel Smelting Co. RIDDELL, ORE. The M. A. Hanna Co., Leader Bldg., Cleveland, O. CD 1/10.

CANADA

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **George Hardy Ltd.,** 163 Wicksteed Ave., Toronto, Ont., CA, $1,443,286, RCOC WAREHOUSES No. 6 and 6, Job 2240, COBOURG, ONT. Defence Constr. Ltd., 40 Eglinton Ave. W., Toronto, Ont. Bids Oct. 28. CD 10/13.

▲ **Skyline Builders Ltd.,** 135 Raglan Ave., Toronto, Ont., Owner Builds, $1,500,000, 200 DWELLINGS, Brandale Sub-division, OAKVILLE, ONT. E. I. Richmond, 455 Spadina Ave., Toronto, Ont., archt. CD 2/9.

▲ **Piggott Constr. Co. Ltd.,** 1250 Bay St., Toronto, Ont., LB, $2,000,000, SERVICE bldg. in North York, TORONTO, ONT. Simpson's Ltd., 176 Yonge St., Toronto, Ont. Bids Jan. 16. CD 1/5.

ALASKA

BIDS ASKED—BUILDINGS

▲† **Alaska, Big Delta**—BARRACKS, etc.—B.A. 3/17—U. S. Eng., Evergreen Hall, 3013 Arcade Bldg., Seattle 1, Wash., two 2 story, 13,000 sq. ft., rein.-con. barracks; 1 story part bsmnt., 7,425 sq. ft., concrete masonry post headquarters and phone exchange; two 70x365 ft. concrete, masonry organizational maintenance shops, family quarters and other bldgs. for Army Training Station and Army Indoctrination Station, ENG 95-507-53-43. $13,000,000. Plans deposit $75. CD 11/26.

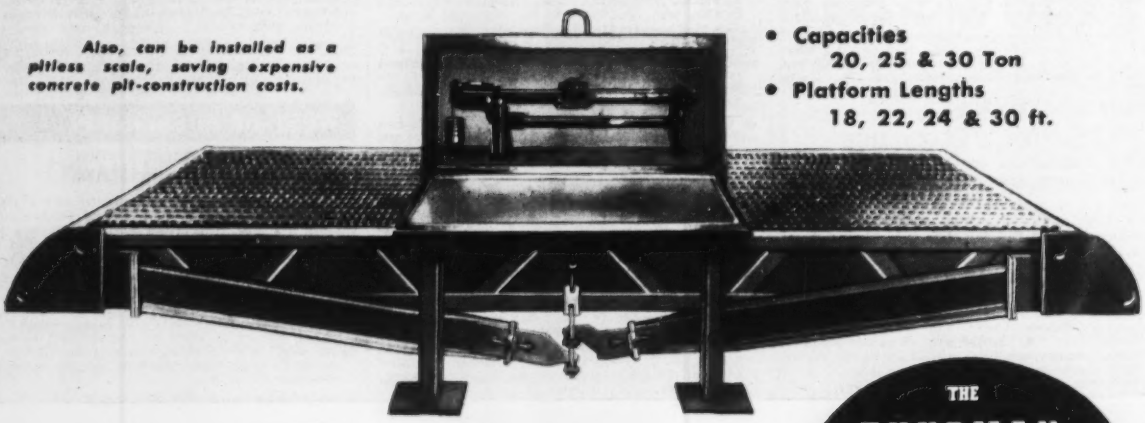
HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Peter Kiewit Sons Co.,** Longview, Wash., LB $1,236,046, est. $1,105,788, two 3 story bsmnt 13,000 sq. ft. 200-man barracks, Ladd Air Force Base, ENG 95-507-53-53, ALASKA. U. S. Eng., Evergreen Hall, 3013 Arcade Bldg., Seattle 1, Wash. Bids Jan. 28. CD 1/7.

THIS SCALE CAN BE MOVED FROM JOB TO JOB, AS A UNIT

Also, can be installed as a pitless scale, saving expensive concrete pit-construction costs.



- **Capacities 20, 25 & 30 Ton**
- **Platform Lengths 18, 22, 24 & 30 ft.**

ACCURATE and PORTABLE

This scale can be transported, assembled, from one job to another by removing six bolts which hold the side levers in place. The complete scale can then be lifted as a unit and loaded onto a truck as a unit. It can be readied for use in minutes.

WIDE STEEL BASES

This scale requires no concrete footing. The steel bases at both ends support the scale perfectly. The easy-to-read weighbeam is chrome-plated. Other vital parts are electro-plated against corrosion. Write for additional information and prices.

THE THURMAN PORTABLE TRUCK SCALE

Est. 1918

Other Thurman weighing equipment: Pit Scales—Pitless scales—Wheelbarrow scales—Warehouse scales, to fit your requirements.

THURMAN MACHINE CO. SCALE DIVISION 156 North Fifth Street Columbus, Ohio Dept. A

Overpass, Rhode Island

Bidding was close on the contract for an overpass at Wilbur Road, Lincoln, Rhode Island. Less than 1% separated the $216,259 low bid of the M. A. Gammino Construction Co., Providence, R. I. from the second low bidder, Campanella & Cardi Construction Co., Hillsgrove, R. I. The high bid was only 4% above the low among the five bids submitted to the R. I. Dept. of Public Works, Div. of Roads and Bridges. The Gammino Co. received the contract.

Work consists of construction of a new bridge and adjustment of the approach to meet the proposed grade on Wilbur Road. The bridge is to be of the 2 span girder type with a composite length of 119.1 ft. The two spans are to be 79.54 ft and 34.26 ft long respectively. Thirty ft will separate the curbs. The work is made difficult because of the necessity of unwatering an old lime quarry and driving steel piling through old quarry debris.

Construction began Dec. 30 and is to be completed by Oct. 30, 1953. Wage rates are: stone masons, $3.04; reinforcing steel workers, $2.70; and common laborers, $1.70 per hr.

Bidders include:

1C	M. A. Gammino Constr. Co., Providence, R. I.	$216,259
2	Campanella & Cardi, Hillsgrove, R. I.	217,068
5	Westcott Constr. Co., North Attleboro, Mass.	224,217

Bids: 12-17-52 Items	Unit	Quantity	Unit Prices 1C	 2
Approach items				
Clearing & grubbing	ac	5.88	$300.00	$600.00
Remove unit "A"	ls	1	800.00	200.00
Prepare to remove unit "B"	ls	1	150.00	100.00
Cut & rem trees & stumps	ea	8	70.00	100.00
General exc—earth	cy	2,902	0.60	0.60
General exc—ledge	cy	1,451	3.00	3.00
Trench earth exc (0'-7')	cy	825	2.00	1.70
7'-12'	cy	7	4.00	5.00
Trench ledge exc (0'-7')	cy	102	7.00	8.00
7'-12'	cy	3	12.00	25.00
Rem & dispose of existing pavement (concrete)	sy	826	0.70	0.60
Scarify & reshape existing pavement	sy	582	0.20	0.30
Borrow outside loc (comm)	cy	20,930	0.40	0.65
Gravel fndn type "A", inc driveways & shoulders	cy	1,867	0.90	1.00
F & P loam	cy	546	2.50	2.50
Trim & fine grading	sy	19,457	0.10	0.10
5½" base crse, crushed stone or gravel	ton	1,891	2.20	2.50
Filler for base crse, sand	cy	426	1.50	1.00
2½" bit mac pvmnt, cl "D" type "D-1" pvng crse	ton	1,217	3.00	3.60
FHH & A bit mat type RT-2 tack coat	gal	2,705	0.21	0.21
type OA-3	gal	16,905	0.16	0.16
F&P stl bar reinf #5 & #6	lb	15,430	0.10	0.11
Cmt conc mary (box culvert) 1-2-4 mix	cy	159.7	42.00	43.00
Rem & rebuild stone walls	lf	871	1.50	3.50
F & L 12" pipe culvert, cl "A", RCC	lf	442	2.20	2.50
18" pipe culvert, cl "B" RCC	lf	54	4.00	4.00
6" pipe culvert, cl "B"	lf	40	0.80	1.20
12", cl "B" CS	lf	870	1.30	1.60
18", cl "B" CS	lf	124	3.00	3.75
Catch basins, type "D", complete in place with F & C #53, under 10'	ea	4	275.00	275.00
over 10'	ea	1	570.00	325.00
over 20'	ea	1	900.00	750.00
with gutter inlet, under 10'	ea	5	380.00	350.00
with gutter inlet, over 10'	ea	2	580.00	400.00
with "F" head, under 10'	ea	2	300.00	300.00
with "F" head, over 10'	ea	1	520.00	350.00
MH complete in place with F & C #37-A, 6' deep	ea	1	180.00	250.00
Conc headwall, 12"	ea	2	40.00	50.00
18"	ea	1	50.00	100.00
Gran curb 6"x18" quarry split, vertical straight	lf	1,016	2.90	3.00
vertical circular	lf	372.5	4.00	3.80
Gran curb, quarry split, 2' radius, 2'-7⅞" long	ea	4	18.00	19.00
Gran curb, quarry split, 2' radius, 90°	ea	11	21.00	21.00
Gran edging, 5"x17" quarry split, vertical, straight RI std 15B	lf	245	2.80	2.90
Gran edging 5"x17" quarry split, 2' radius, 90° corner RI std 15B	ea	2	14.00	14.50
Gran curb 6"x19" rough quarry split, vertical Fletcher type VRE-A	lf	996	2.00	2.00
Conc curb, precast "S" strt	lf	274	2.30	2.40
"S" circular	lf	83.6	3.00	2.70
Conc curb, precast, "S" 2' radius, av length 2'-9¼"	ea	11	10.00	10.00
Rem & reset gran edging	lf	132	0.60	1.00
Rem & salvage gran edging	lf	189	0.20	0.20
Conc sdwlk, 4" mono, 1-2-4 mix	sy	14	4.00	5.00
Bit sidewalk, cl "I"	sy	933	1.60	2.00
Met guard rail, incl anchor type selected	lf	606	3.70	3.85
Met guard rail, without upper bank, incl anchors	lf	252	3.30	3.25
Wire fence, stock wire includes barways	lf	431	1.30	1.30
Watchman	hr	3,000	1.25	0.90
Rip-rap-Cl "B"	sy	79	4.00	10.00
Seed & roll loamed areas	sy	4,719	0.10	0.08
Seed (slope mix "A") F & D	lb	215	0.90	1.00
Fertilizer, comm 8-6-4 F & D	lb	1,100	0.05	0.04
Agrilime, F & D	ton	1.1	20.00	20.00
Structure items—bridge				
Struct exc—earth	cy	437	5.00	3.00
Struct exc—ledge & mary	cy	150	8.00	10.00
F & D Fndn piles, 10" 42#/H-sec	lf	6,175	2.50	2.60
Fndn piles, drive	lf	5,800	1.00	1.00
F & D driving equipment	ls	1	500.00	1,000
Fndn piles—splicing	ea	60	25.00	30.00
Struct conc mary, cl A footings	cy	326.53	26.00	23.00
piers, abtmnts, wall & appr	cy	505.06	44.00	45.00
deck & sidewalk	cy	111.27	73.00	50.00
Struct conc mary, cl X bar ring & fascia beams	cy	84.23	89.00	62.00
Conc surface finish—rubbed or bushhammered	sf	8,540	0.25	0.30
granolithic sidewalk	sy	116	1.00	1.50
Bar reinf—all sizes	lb	67,005	0.10	0.11
Str stl—stringers & diaphragms, furnish, fabricate, erect & paint	ls	1	30,000	28,490
Str stl—sole & bearing plates, furn, fabricate, erect & paint	ls	1	2,500	2,160
Str stl—shear connectors	ls	1	1,500	2,500
Exp joint fittings, F, D & P, galv (pvmnt & sdwlk)	ls	1	1,100	1,985
Guard rail anchor bolts, ¾" x 1'-3" galv	ea	30	3.50	5.00
"L" hanger inserts, FD&P	ea	80	2.00	3.00
Joint filler, ¼", preformed nonextruding	sf	735	0.50	0.60
Pipe, 2" WI galv (drains)	lf	36	1.00	3.00
Abutment drains, 6" bit ctd, corr galv sheet met, perf	lf	220	1.50	2.50
2" deck drain & cover	ea	2	10.00	20.00
Waterproofing-mopped	sy	402	0.75	1.50
Struct pvmnt, cl I, type "I-1", 2½" bituminous	sy	393	1.50	1.60
Gran curb 6"x11", incl galv dowels & cramps, comp	lf	235	4.20	4.50
Earth fill, type "A" gravel selected borrow	cy	310	1.00	3.00
Structure items—road retaining wall				
Struct exc—earth	cy	400	15.00	3.00
Struct exc—ledge	cy	80	20.00	10.00
Earth fill—selected borrow Cl "A" gravel	cy	102	1.00	3.00
Fndn piling 10" 42#/H-sect, furnish	lf	120	2.50	3.00
drive	lf	100	1.25	3.00
Struct conc mary, cl A, (sub-footing)	cy	125.93	28.00	24.00
(footings)	cy	66.51	30.00	26.00
(wall & cope)	cy	97.15	49.00	44.00
(railing)	cy	6.38	200.00	120.00
Conc surface finish-rubbed	sf	1,960	0.25	0.30
Bar reinf—all sizes	lb	7,779	0.10	0.11
Joint filler, ¼" preformed nonextruding	sf	121	0.50	1.00
Pipe, 3" VC	lf	18	1.00	2.00

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Equipment distributors can expect good business but tougher competition

How best to finance the sales of new, used and rental equipment holds spotlight at AED annual meeting

J. R. Carr
Associate Editor

Distributors of construction equipment, as an industry, can expect their total sales volume to continue at present levels for at least the next 12 to 18 months, but individually, each will have to do a better selling job to maintain his present position in a highly competitive market that promises to become even more so.

These two predictions—made last week in Chicago by Sidney D. Maddock, president of the C.I.T. Corporation—at the 34th annual meeting of the Associated Equipment Distributors—came as no surprise to many of those in attendance. It more or less corroborated their own outlook on the industry's future.

But what he had to say about better methods and current trends in construction-equipment financing received their undivided attention. For here was the head of one of our largest construction-equipment financing firms giving generously of his experience so that the distributors could profit therefrom. And the subject presented is the backbone of the industry.

• **18-month outlook**—As a backdrop for his talk, on "Speeding Dollar Turnover to Insure More Profit," Maddock presented an outlook of the industry for the next 18 months. "During that period," he said, "the demand for construction equipment should hold fairly steady at present levels. Even the expected slump in the demand for equipment for military preparedness should not cause any material reduction in total equipment sales."

We must have new and improved machines and equipment, said Maddock, and better means of transportation and communication to meet the demand of greater production. New products coupled with better transportation of men and goods will encourage industry to locate close to the supply of materials or power.

Population growth and its geographic redistribution will give an added lift to our economy—particularly in the construction industry since it means more housing, together with more schools, roads, airports, public utilities, and other public construction.

Getting down to the business of selling and financing construction equipment, Maddock declared that dollar prices likely will increase as the market gets stronger, and better and larger machines become available. "Moreover," he said, "you distributors will be constantly realizing the technological obsolescence of old equipment which, will compel contractors to buy the new and trade in the old."

• **Speed dollar turnover**—Emphasizing the need for speeding dollar turnover to insure better profit, Maddock warned the distributors that their dollars can stagnate in fixed assets, plants and shop equipment. The same applies to inventories of both new and trade-in equipment. "When you accept a trade-in," he said, "be realistic. Trade it in at the price you would pay for it if you were not making a sale. Having set the price, sell it and sell it quickly. Remember an idle dollar in that used equipment yard is a dollar immobilized."

New construction equipment is certain to become more plentiful as production for domestic use mounts and the demand remains about the same as at present. "As a result," warned Maddock, "manufacturers are sure to be pressing distributors to accept more and more stock. Consequently, you must decide how much equipment you can take into inventory profitably at any one time.

In the period of keen competition that lies ahead, said Maddock, distributors must decide whether they are going to concentrate on the sale and distribution of equipment or whether they are going to try to do the dual job of selling and banking. The equipment manufacturers answered this identical question before World War II by passing the financing on to the distributors and the contractor. What you distributors need today is a financing plan that gives you quick, free use of your entire case sales price.

• **Rental fleets**—Rental contracts for construction equipment are of three types, said Maddock. Two types—both of which involve genuine leases—are where a contractor needs certain equipment for either a short-term or long-term contract. In neither case does he intend to purchase it.

"The third type, and the most troublesome agreement," declared Maddock, "is a so-called lease which is nothing more than an attempt to disguise a conditional sale or lease. Some of these lease-purchase contracts have state option agreements. The amount of rent that the so-called lessee is obliged to pay is such a large part of the whole purchase price that he most likely will exercise his option although it is dressed up as a lease. The interest of all would be better served if such transactions were presented for what they really are—a conditional sale."

Many of these so-called leases, according to Maddock, are nothing more than a device to permit the contractor to take possession of the equipment with little or nothing as a down payment. In this type of transaction—which is a conditional sale dressed up

Power plant contracts

The Ohio Valley Electric Corp., operator of the two huge steam electric generating plants that will provide power for the $1.2-billion atomic energy plant in Pike County, Ohio, last week announced contract awards totaling $14.5 million.

The 15-utility combine made a $6.5-million award to Booth & Flinn Co. and Ferguson & Edmondson Co., of Pittsburgh, for the 1,000,000 kw Kyger Creek power plant at Cheshire, Ohio.

Sollitt Construction Co., of South Bend, Ind., was awarded a contract for the 1,200,000-kw Clifty Creek power plant, near Madison, Ind., on a bid of more than $3 million.

Contracts were for both foundation and general building. Work is expected to start at both plants within 45 days. At the peak of construction activity, Clifty Creek will require 2,000 workers; Kyger Creek, 1,600.

as a lease—the contractor may want to do one of three things:

He may want to avoid making the usual down payment under a conditional sales contract; to improve his financial statement for bidding and bonding purposes; or to treat the rental payment in its entirety as an expense. In the latter case he is hoping to obtain a larger expense factor than he can by way of depreciation when accounting for the cost of the contract being performed.

"No matter how valuable any of these objectives of the contractor may be," warned Maddock, "you distributors should remember that you have a paramount interest in making the sale. Moreover, you want your profit on that sale to be free of any encumbrances because of the manner in which your customer wishes to treat the transaction. There are many types of rental contracts but several are faulty and will not accomplish the end results being sought. Be extremely careful in preparing so-called lease-purchase contracts to avoid being placed in an exposed position that will cost you dollars."

Maddock stressed the need for a more realistic approach to the problems of financing the sale of construction equipment.

He warned the equipment distributors to watch their contract agreement more carefully. And, he told the distributors that many contractor-purchase contracts are for too short a term.

Too much short-term debt is a handicap and one of the principal reasons for failure of contractors, Maddock said.

In view of the higher-priced, more durable equipment now available, a three-year purchase contract would be a sound transaction in many instances, he concluded.

• **Construction training**—Technological advancements in construction methods and equipment call for more engineering background for the successful contractor organization.

That was the observation of Frank Nikirk, an authority on the practical application of construction machinery, who now teaches a course in construction at the University of California.

Manufacturers and contractors should give more assistance to engineering colleges now training young contractors-to-be, declared Nikirk. But not enough attention is being given to collecting and analyzing data on contemporary methods of construction. When this is accomplished the industry will be in a better position to furnish the practical data needed to teach construction in our schools, he said.

Speaking on the fast-changing construction picture under the new administration in Washington, Joseph T. King, AED's Washington representative, warned the association members that "you must accept your cut in operations along with others to effect the President's economy program."

The federal government wants the advice of our industry, declared King, and we must be in a position to give it.

Don't conclude that controls may not be reinstated, he added.

• **Sales training**—At the last session of the five-day meeting, which had a total registration of over 2,900, Harold H. Maynard, chief of business organization, University of Ohio, moderated a panel discussion on training distributor employees. He said:

"Proper training is the foundation of selling. You must do a better job of selling and servicing, and show the contractor how to use equipment better in order to meet the demands of our highway work and other construction programs."

The six-man panel, made up of three manufacturers and three distributors, delved into the three types of training—sales, service, and parts—essential to both the manufacturing and distributing industries. Consensus was that it depends on the magnitude and type of training involved, whether training schools should be given at manufacturers' plants or distributors' headquarters.

• **Surplus equipment**—The distributors are concerned over the growing stockpile of heavy construction purchased by various federal agencies since the outbreak of the Korean conflict. Any sudden and ill-advised release of such machinery upon the domestic market in the form of surplus could create abuses worse than the surplus equipment problems following World War II.

The association adopted a resolution urging that a practical and feasible program be developed by the federal government for the orderly disposal of such equipment upon cessation of hostilities in Korea. The full cooperation of the AED was offered in developing the basic principles of the program.

• **New officers**—S. John Oechsle, president, Metalweld, Inc., Philadelphia, was elected president of AED, succeeding H. J. Hugh, Griffin Equipment Corp., New York City. Other new officers are: Frank Skidmore, Albuquerque, executive vice-president; and vice-presidents, G. W. Gagel, Kansas City; R. J. Finn, Cincinnati; and J. W. Halls, Montreal, who is also president of the Canadian Association of Equipment Distributors. F. J. Fitzpatrick was elected treasurer. P. D. Hermann is executive secretary and J. R. Randle, field secretary.

Home financing volume running ahead of 1952

The volume of home financing this year is running ahead of the comparable period in 1953, and there has been an increase in savings to supply more available funds for home financing.

That was the consensus of reports of the executive committee of the National Savings and Loan League which met last week at Miami, Fla.

Raleigh W. Greene, president of the league, said that members of the executive committee were optimistic about the business outlook for 1953.

Greene himself asserted that earlier predictions of 1,000,000 housing starts for 1953 might be too conservative.

League officials also noted that mortgage interest rates are edging higher through most of the country.

They attributed this to the impact on the money market of the trend to higher interest rates at the U. S. Treasury, the Federal Reserve Board, and in the commercial banking field.

Officials of the league also said they expect the federal government to boost the interest rate on government-guaranteed and -insured loans of both the Federal Housing Administration and the Veterans Administration.

• **Interest boost resisted**—However, there were indications in Washington last week that the savings and loan officials would have a long wait, along with others, for any increase in FHA and VA interest rates.

Raymond H. Foley, head of the Housing and Home Finance Agency, and Carl Gray, head of the Veterans Administration, told members of the Senate Banking Committee that the present interest rates are high enough to insure an adequate flow of capital into home mortgages.

This week, the Senate committee will hear builders, bankers and others who want FHA and VA rates boosted.

Authorities' bond selling under fire in N. J. courts

Two taxpayer suits in state's superior court test power of state construction agencies to sell bonds

A second New Jersey construction agency is under attack in the state's superior court.

The State Building Authority's power to sell bonds is being tested in a taxpayer's suit. The authority had planned a $30-million construction program that included a new state office building in Trenton, an administration building for the state Department of Education on the campus of the Hillwood Lakes State Teachers College, a string of motor vehicle inspection stations, and several state police barracks.

Last month, another taxpayer started suit in the superior court to prevent the State Highway Authority from selling bonds to finance construction of the Garden State Parkway.

The suit against the State Building Authority was filed by George J. McCutcheon, of Glen Ridge, N. J.

In his suit, McCutcheon contended that the legislative act creating the State Building Authority violated the constitutional ban on pledging or lending the state's credit without a referendum.

• **Lease arrangement**—The authority was created in 1950 and given bonding power to construct buildings for state use under lease agreements. The act specifically provided that any bonds issued were not state obligations.

But McCutcheon contended in his suit that despite this provision the bonds actually create a state debt, because the only security for the bond holders would be the long-term leases to be signed by the state, and bonds would be paid off from rents received under the terms of those leases.

The suit also charged that the long-term leases violate another section of the state constitution that requires all monies for state purposes to be provided in a general appropriation covering one and the same fiscal year. The "leases" are not leases at all, according to McCutcheon's complaint, but are contracts for the purchase of property by the state.

• **Bond sale deferred**—State Treasurer Walter T. Margets, who is chairman of the building authority, said the suit would prevent the authority from proceeding with a proposed sale of $675,000 in bonds to refund short-term loans and begin long-term financing.

While the construction programs of the State Building Authority and the State Highway Authority were being tested in the courts, a third New Jersey building program was proceeding smoothly.

A syndicate headed by National City Bank of New York made a successful bid on a $15-million state bond issue that will be used to pay for construction of new buildings at five state teachers' colleges.

The bond issue received the approval of the voters in the November, 1952 general election.

California sells $100-million bond issue

Funds will carry veterans home-loan program through March, 1954; 6,200 homes, farms can be added

A nation-wide syndicate, headed by the Bank of America of California and the Bankers Trust Co., of New York, has been awarded an issue of $100 million of California veterans farm and home-loan bonds.

The isue is two-thirds of the $150-million bond issue authorized by the California voters last November.

Officials of the State Department of Veterans Affairs said the money probably will carry the farm and home-loan activities through March, 1954.

Actually, the sale of the bonds made only $50 million available to the program. The California legislature advanced $55 million to carry the program through after an earlier bond issue had been exhausted. Of that amount, some $50 million had been loaned out and now must be returned to the state treasury.

Using the $50-million figure as a sum to be allocated in the next year, the Veterans Affairs Department estimates 6,200 homes and farms will be provided to veterans.

Since the loan program was instituted in 1921, a total of some 61,000 homes and more than 1,000 farms in California have been financed through the state's loan system.

Net interest cost of the new issue was 2.41%. That compared to an interest cost of 1.73% for $25 million in veterans home and farm-loan purchase bonds sold in January, 1952.

The sale increased speculation on future policy of the state veterans board; there were serious doubts that the state could continue the present 3% interest rate charged veterans under the plan.

The veterans board, under California law, can set the rate anywhere from 2.5% to 4%, but the 3% rate has prevailed for the last six years.

Pressure for an increase in the California interest rate on veterans home loans has stepped up because of insistence, on a national level, that the federal government boost the rates on FHA and VA mortgages.

St. Lawrence power project claims get final hearing

Federal Power Commission Examiner Glen R. Law has set Feb. 27 for hearing oral arguments from the New York State Power Authority and the Public Power and Water Corp., a Trenton, N. J., firm, on their rival applications for authority to join Canada in construction of a St. Lawrence River power project.

The examiner, who announced that oral arguments will be in lieu of reply briefs, set Feb. 20 as the deadline for filing of main briefs and proposed findings.

Georgia bridge authority bill passes lower house

Legislation creating a three-member Georgia State Bridge Authority with which the state highway department may enter into contracts has been adopted by the Georgia house of representatives and sent to the state senate for concurrence on amendments prior to going to the governor for signature.

The bridge authority is empowered to issue up to $30 million of revenue certificates to finance construction of new bridges. From its funds for bridge maintenance, the state highway department is authorized to pay rentals of up to $2,500,000 per year on new bridges.

Philadelphia Airport work criticized

City council finds plans were too advanced for stage of development; charge costs were too high

A Philadelphia special councilmanic committee investigating the city's multi-million-dollar International Airport construction program has called for establishment of a new Department of Aviation, headed by a Commissioner of Aviation to correct mistakes uncovered by its probe.

The final report on the committee's work said that the city already has spent $14 million more than requirements dictate on the airport's new terminal building.

The building itself was described as "more than twice the size 'required' for the first stage of construction."

It further stated that the entire airport improvement program with its 396,000-sq ft. terminal, will cost about $52 million.

"The committee is convinced that the City of Philadelphia could have had an adequate terminal and field improvements by 1949 for about $14 million less than finally will be required," the report stated.

The report was signed by a majority of the committee, but a minority report—by Republican members of the committee—agreed that some of the criticism was justified, and concurred in the recommendation for a Department of Aviation. The minority did not agree, however, with charges of waste and inefficiency.

The report of the majority did point out that, while there were some items of materials and construction which could be criticized, "the construction, on the whole, is sound and of good quality."

• **Lack of coordination**—The majority report also said that as early as 1946 there was a "wide divergence of opinion" on airport requirements.

It said that there was a "poor working relationship" between Airways Engineering Corp., involved in the improvement designs, the Director of Public Works, the chief of the Bureau of Aeronautics and the chief of the Bureau of Engineering.

"As planning proceeded and delays were encountered," the report continued, "the poor working relationship extended to the airlines, architects and the Civil Aeronautics Authority."

• **Finger-type building**—The committee noted that work on the peripheral-type terminal at International was discontinued on Feb. 3, 1948. Completed plans and specifications for the finger-type building were not delivered until nearly two years later, the committee said.

It absolved J. Victor Dallin, chief of the city's Bureau of Aeronautics. "Mr. Dallin's record indicates," it said, "that he had a thorough grasp of the problem and that he repeatedly protested the extravagant size of the terminal and its imbalanced design." The Bureau of Aeronautics, the committee said, was limited only to the operation of the city's airports and was excluded from detailed planning.

The committee said its consensus was that Airways Engineering Corp. "failed in its agreed and implied responsibilities" under its various contracts with the city.

"It is the consensus of the committee," the report continues, "that the architects who, by the record, were equally responsible with Airways Engineering for the planning of the terminal building, were seriously in error in the development of the functional plans of the finger terminal."

Continuing its criticism, the committee said: "The committee is convinced that the fundamental error that led to the great delay and terrific costs in this airport program was the lack of experience on the part of the city and consulting engineers, the lack of organizational ability on the part of city officials, and the vacillation of the airline advisory panels.

"If Philadelphia had followed the planning and pattern of Baltimore and based its planning upon well-founded traffic factors, it could have planned, constructed and finished a suitably sized first-stage terminal and all . . . field improvements . . . in 1947."

• **Dept. of Aviation**—And now a Department of Aviation, the committee said, will enable the city to take full advantage of the accelerating development of all branches of aviation.

Several officials and employees resigned during the course of the investigation. Others were fired.

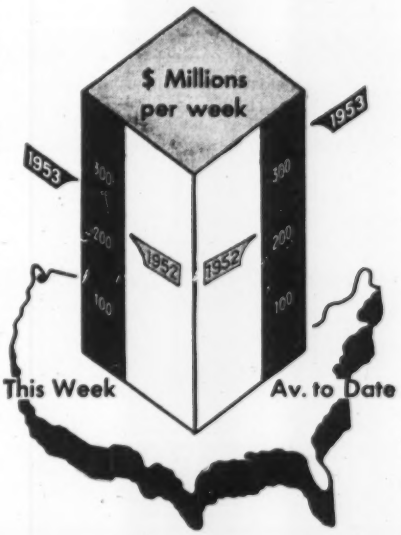
Mayor Joseph S. Clark, Jr., indicated that the committee's recommendations will be studied thoroughly.

Creation of the aviation department may have to await the drawing up of next year's budget.

Though sharply critical of some of the things it found, the committee said that it did not find, at any stage, sufficient evidence to recommend any criminal prosecutions.

Activity This Week

As reported to ENR (in millions of dollars)



Contracts by type of work

	This Week	Cumulative 7 wks 1953	Cumulative 7 wks 1952	% chge
Waterworks	$4.7	$26.4	$41.2	−36
Sewerage	6.8	60.6	23.4	+159
Bridges	5.9	68.0	26.7	+155
Highways	11.3	170.4	143.4	+19
Earthwork, waterways	4.0	60.0	56.4	+6
Buildings:				
Public	16.0	250.7	200.6	+25
Housg., pub.	13.5	128.6	102.9	+25
Housg., priv.	69.5	640.4	352.9	+81
Commercial	30.4	135.5	56.1	+142
Industrial	62.0	672.8	421.7	+60
Unclassified	43.7	229.4	172.1	+33
Total	**$267.8**	**$2,442.8**	**$1,597.4**	**+53**

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

ENR indexes		Base Year = 100 1913	1926	1949
Constr. cost.	Feb.	587.19	282.26	123.09
	Jan.	587.27	282.30	123.11
Bldg. cost	Feb.	425.24	229.87	120.88
	Jan.	425.04	229.76	120.82
Volume	Jan.	714	290	206

$17.5-Million bid is low for Gavins Point Dam

A $17.5-million bid appeared low last week for Stage 2 construction of the Army Engineers' Gavins Point Dam across the Missouri River, near Yankton, S. Dak.

The bid was more than $1 million below the government's estimate and it ran $3 million to $4 million below the bids of four other contractors.

Low bidder was a combine that included: Western Contracting Corp., of Sioux City, Iowa; Massman Construction Co., of Kansas City, Mo., and J. A. Jones Construction Co., of Charlotte, N. C.

Bids covered construction of the Gavins Point powerhouse substructure; the spillway (complete) and the balance of the earthwork, according to Col. Hubert S. Miller, Omaha district engineer.

When the contract is completed in 1955, Gavins Point will be ready to assume its principal function, redirecting the flows from Fort Randall Dam, 75 mi upstream.

A portion of the dam's foundation has been built. Construction began last summer. Total cost of the Gavins Point Dam project is about $60 million.

Nickel boost proposed for Delaware Bridge toll

Joseph K. Costello, executive director of the Delaware River Port Authority, has proposed an increase in the toll on the Delaware River Bridge at Philadelphia from 20 cents to 25 cents. If approved, the increase would restore the toll to the level charged from 1926 to 1937.

Opposition to the Costello proposal came promptly from spokesmen for automobile clubs who contend that the increased toll would be unfair to users of the bridge because the added revenue would be used to finance other Port Authority projects.

"The 25-cent toll is the minimum needed if the authority is to carry out the mandate of the legislatures," Costello said in answer to this criticism. He added:

"We have the choice of just running a bridge and having no money to spare for other port improvements, or of carrying out the concept of a dynamic port authority. If we are to have the latter, we must have funds."

He said the authority can raise the tolls on its own authorization, without securing the permission of the legislature.

OFFICIAL PROPOSALS

APPEAR HERE EACH THURSDAY. PROPOSAL ADVERTISEMENTS ACCEPTED UP TO 10:30 A.M. FRIDAY FOR THE ISSUE DATED THE FOLLOWING THURSDAY.

Bids: February 24, 1953

Construction of Substructures for Bridges

Sealed proposals will be received by the West Virginia Turnpike Commission for:

CONTRACT NO. 19

The work to be done under this Contract consists in performing the required grading and drainage for approximately 4.46 miles of the West Virginia Turnpike including the relocation of approximately 1.56 miles of side roads plus the construction of the substructures for bridges known as structures 5, 6 and 7. This work is located between the Village of Gardner at about mile 4.8, and the Bluestone River mile 9.0, Mercer County, West Viriginia, and is in connection with the construction of the West Virginia Turnpike in the State of West Virginia.

The Principal items of work include:

	Approximate Quantity
Cleaning and Grubbing	48 Acres
Excavation (all types)	1,100,000 C. Y.
Embankment	1,000,000 C. Y.
Concrete	1,920 C. Y.
Reinforcing Steel	110,300 Lbs.
Steel Piles	1,494 Lin. Ft.
Culvert Pipes and Underdrains	7,600 Lin. Ft.

Proposals will be received at the office of the West Virginia Turnpike Commission, 1340 Wilson Street, Charleston 5, West Virginia until 9:00 A. M. Eastern Standard Time, and thereafter at the Woman's Club of Charleston, Virginia and Elizabeth Streets, Charleston, West Virginia until 10:00 A. M. Eastern Standard Time, on February 24, 1953, at which time and place said proposals will be publicly opened and read.

Contract documents may be seen and may be inspected by prospective bidders during office hours, after January 30, 1953, at the office of Howard, Needles, Tammen & Bergendoff, 804 Greenbrier Street, Charleston, West Virginia, and at the offices of the Engineers, Capitol Engineering Corp., Dillsburg, Pennsylvania and at 106 North 5th Street, Princeton, West Virginia.

Contract plans and specifications will be furnished for Twenty-Five Dollars ($25.00) for each set, which is not refundable upon application to Howard, Needles, Tammen & Bergendoff, 804 Greenbrier Street, Charleston, West Virginia. Cross Sections are bound separately and will be furnished for Forty-Five Dollars ($45.00) for each set. Make checks payable to Howard, Needles, Tammen & Bergendoff.

Proposals must be made upon the proposal forms furnished by the Commission in the manner designated in the Specifications, and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and the number of the contract on the outside, and must be accompanied by a CASHIER'S or CERTIFIED CHECK or PROPOSAL BOND in favor of the West Virginia Turnpike Commission FOR NOT LESS THAN (5) PER CENT OF THE AMOUNT OF THE PROPOSAL, but not less than $500.00 nor more than $200,000.00 and must be delivered at the place designated above on or before the day and hour named. Copies of the proposal form and proposal bond form to be used for submitting proposals and of the special addressed envelope are furnished in detached form with the contract documents.

The contract will be awarded or the proposals rejected within thirty (30) days from the date of opening proposals. The right is reserved to reject any or all proposals, and to waive any or all formalities.

WEST VIRGINIA TURNPIKE COMMISSION
D. Holmes Morton, Chairman
January 24, 1953

Bids: February 24, 1953

Grading & Drainage of Turnpike

Sealed proposals will be received by the West Virginia Turnpike Commission for:

CONTRACT NO. 27

The work to be done under this Contract consists in performing the required grading and drainage for approximately 9.0 miles of the West Virginia Turnpike including eight bridge substructures and the relocation of approximately 2.4 miles of State Highways. This work is located between the Town of Miami, mile 71.3, and the Town of Chesapeake, mile 80.3, Kanawha County, West Virginia, and is in connection with the construction of the West Virginia Turnpike in the State of West Virginia.

The Principal items of work include:

	Approximate Quantity
Clearing and Grubbing	320 Acres
Excavation (all types)	3,180,000 C.Y.
Embankment	1,700,000 C.Y.
Concrete	9,725 C.Y.
Reinforcing Steel	750,000 Lbs.
Culvert Pipes and Underdrains	12,000 Lin. Ft.
Steel Piles	12,500 Lin. Ft.

Proposals will be received at the office of the West Virginia Turnpike Commission, 1340 Wilson Street, Charleston 5, West Virginia until 9:00 A.M. Eastern Standard Time, and thereafter at the Woman's Club of Charleston, Virginia and Elizabeth Streets, Charleston, West Virginia until 10:00 A.M. Eastern Standard Time, on February 24, 1953, at which time and place said proposals will be publicly opened and read.

Contract documents may be seen and may be inspected by prospective bidders during office hours, after January 30, 1953, at the office of Howard, Needles, Tammen & Bergendoff, 804 Greenbrier Street, Charleston, West Virginia, and at the offices of the Engineers, Gannett Fleming Corddry & Carpenter, Inc., 123 Forster Street, Harrisburg, Pennsylvania, and at 6218 Penn Avenue, Pittsburgh 6, Pennsylvania, and at Chesapeake, West Virginia.

Contract plans and specifications will be furnished for Thirty Five Dollars ($35.00) for each set, which is not refundable, upon application to Howard, Needles, Tammen & Bergendoff, 804 Greenbrier Street, Charleston, West Virginia. Cross Sections are bound separately and will be furnished for One Hundred Dollars ($100.00) for each complete set, which is not refundable. Partial sets can be furnished at cost upon application. Make checks payable to Howard, Needles, Tammen & Bergendoff.

Proposals must be made upon the proposal forms furnished by the Commission in the manner designated in the Specifications, and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and the number of the contract on the outside, and must be accompanied by a CASHIER'S or CERTIFIED CHECK or PROPOSAL BOND in favor of the West Virginia Turnpike Commission FOR NOT LESS THAN FIVE (5) PER CENT OF THE AMOUNT OF THE PROPOSAL, but not less than $500.00 nor more than $200,000.00 and must be delivered at the place designated above on or before the day and hour named. Copies of the proposal form and proposal bond form to be used for submitting proposals, and of the special addressed envelope are furnished in detached form with the contract documents.

The contract will be awarded or the proposals rejected within thirty (30) days from the date of opening proposals. The right is reserved to reject any or all proposals, and to waive any or all formalities.

WEST VIRGINIA TURNPIKE COMMISSION
D. Holmes Morton, Chairman
January 24, 1953

(More Official Proposals on Pages 65, 66 & 67)

OFFICIAL PROPOSALS

Bids: March 4, 1953

Construction of Additions to Sewage Treatment Plant

OFFICE OF THE MAYOR, CITY OF LIMA, OHIO

Contract No 33 - P - 414 January 31, 1953

Sealed proposals will be received by the Mayor of the City of Lima, Allen County, Ohio, at his office in the City Building until 12 o'clock noon, Eastern Standard Time, on Wednesday, March 4, 1953, and then publicly opened and read for the construction of additions to and modifications of the Sewage Treatment Plant of the City of Lima, Allen County, Ohio.

The work will consist principally of:

Remodeling the existing inlet diversion chamber; laying a new inlet sewer; constructing a screen chamber; detritor basin, screen, and detritor building, two (2) primary sedimentation tanks, storm water overflow, venturi pit, excess sludge thickener; three (3) aeration tanks, one (1) final sedimentation tank, chlorine contact tank, chlorination building, one (1) digester, digestion control building and sludge beds; installing mechanical equipment, connecting piping, electrical facilities, flow measuring devices, pumps, blowers, and heating and ventilating equipment; remodeling the primary sludge handling and pumping facilities; the return activated sludge handling and pumping facilities, the aeration tanks, the final sedimentation tanks, the outlet control chamber and the sludge digestion facilities, and the furnishing and installing of auxiliary equipment and piping, all in accordance with the Plans and Specifications.

Plans and pamphlet containing the Contract Documents consisting of Invitation and Information for Bidders, blank form for Bid or Proposal, form of Contract, and Specifications for the work are on file in the office of the Mayor at the City Building, Lima, Allen County, Ohio, and at the office of the Engineer, Alfred B. Anderson, 990 Broad Street, Newark 2, New Jersey, and may be inspected by prospective bidders during office hours.

The successful bidder will be required to pay the minimum wage rate established by the Department of Industrial Relations of the State of Ohio. No bidder may withdraw his proposal for a period of thirty (30) days after the date of the opening of the bids.

Plans and contract documents may be obtained at either location upon the deposit of $25.00 for each set. The deposit will be refunded if the documents are returned in good condition not later than fifteen (15) days after the award of the contract.

All bids shall be made on the blank form provided in the Contract Documents.

A certified check upon a solvent bank or satisfactory bid bond in the amount of five percent (5%), of the total bid made payable to the order of the City of Lima, Ohio, shall accompany the Proposal, but in a separate envelope. Said check or bond to be a guarantee that if the proposal is accepted a contract will be entered into and the performance of it properly secured as required.

Terms of Proposal and Sureties required are fixed by the Contract Documents.

The contract will be awarded to the lowest and best Bidder, but the right is reserved by the Mayor to reject any and all bids or to waive any informalities in favor of the City.

By direction of the Council of the City of Lima, Ohio.

Stanley A. Welker
Mayor City of Lima, Ohio

Bids: February 24, 1953

Rt. 1-1927 (Route U. S. 1 & 9—1953), Secs. 1D, 2B & 17

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

Route 1-1927 (Route U.S. 1 and 9-1953), Sections 1D, 2B & 17, Tonnelle Avenue Drainage Improvement, Jersey City and North Bergen Township, Hudson County.

Estimated:

176 sq. yds. Pavement Excavation
176 sq. yds. Macadam Base & Intermediate Courses
3,082 lin. ft. 6" to 12" Clay Pipe
540 lin. ft. 18" to 42" R. C. Pipe
79 lin. ft. 12" C. I. Pipe
222 lin. ft. 13" x 22" C. M. Pipe Arch
17 units Inlets and Manholes
30 units Inlets, Type "S" (Sidewalk)
40 tons Pavements, Type MA-BC-2

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, February 24, 1953, at eleven o'clock (11:00 A.M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J. and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: R. J. Abbott
State Highway Commissioner

Bids: February 24, 1953

Rt. 35, Navesink River Bridge (Reconst.)

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

Reconstruction of Deck Joints and Repaving of deck of the Navesink River Bridge on Route 35 in the Borough of Red Bank, Middletown Township, Monmouth County. The principal items of construction are:

Estimated 767 tons Pavement, Type MA-BC-2
4,168 sq. yds. Pavement Surface Removal
988 lin. ft. Concrete Headers

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, February 24, 1953, at eleven o'clock (11:00 A.M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000. and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: R. J. Abbott
State Highway Commissioner

Bids: March 17, 1953

Conant-Mt. Elliott Relief Sewer

DEPARTMENT OF PUBLIC WORKS
CITY OF DETROIT, MICHIGAN
CONTRACT PW-1432

Sealed proposals for a sewer, located in Leib Street and Leib Street (Extended) right-of-way, from Jefferson Avenue to the Detroit River, addressed to the CITY ENGINEER'S OFFICE, DEPARTMENT OF PUBLIC WORKS, of the City of Detroit, and endorsed: "Proposal for Contract PW-1432" will be received at the OFFICE OF THE CITY ENGINEER, 30TH FLOOR, GUARDIAN BUILDING, until 2:00 p.m., City of Detroit Time, on MARCH 17, 1953, at which time they will be publicly opened and read aloud. Any proposal received after the above-mentioned time will be returned to the bidder unopened.

The work included consists of approximately one quarter mile of double-barrel, reinforced concrete box sewer, each barrel being 10'-0" wide by 10'-6" high, inside dimensions. The work in Leib Street will be entirely in open-cut, extending from Jefferson Avenue southward to the Detroit River. At Jefferson Avenue, a regulating and diversion dam chamber is to be constructed and the regulating equipment is to be furnished and installed.

The Contract Documents, including Notice to Bidders, Form of Proposal and Agreement, Drawings, and Specifications, may be examined at the Office of the City Engineer, 30th Floor, Guardian Building, Detroit 26, Michigan during business hours, and copies may be obtained by making a deposit of $15.00 per set, which sum will be refunded upon the return in good condition of the complete set of Contract Documents within ten days after receipt of proposals, or if used in submitting a bona fide proposal.

Each proposal shall be accompanied by a certified check or a satisfactory bidder's bond in an amount not less than 5 percent of the total bid price, as security for the acceptance of the Contract.

All checks shall be made payable to the Treasurer, City of Detroit.

After the scheduled closing time for receipt of bids, no proposal may be withdrawn for at least 45 days.

The City of Detroit reserves the right to waive any informality in any bid, or to accept any bid, or to reject any or all bids, should it be deemed for its best interests so to do.

CITY OF DETROIT,
CARL D. WARNER
Commissioner of Public Works
G. R. THOMPSON, City Engineer

Bids: March 10, 1953

George Washington Bridge

THE PORT OF NEW YORK AUTHORITY
CONNECTION WITH PALISADES INTERSTATE PARKWAY—STAGE IV

CONTRACT GWB-140.005

Sealed proposals for alterations to the Lemoine Avenue Bridge and the thoroughfares adjacent thereto in Fort Lee, New Jersey, will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, New York, until 2:30 o'clock on the afternoon of Tuesday, March 10, 1953, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1110, on Friday, February 13, 1953, and copies will be furnished upon deposit of $25.00 per set. The deposit shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to the Engineer of Materials who will furnish the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than thirty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman.
New York, February 12, 1953.

OFFICIAL PROPOSALS

Bids: March 13, 1953

PUERTO RICO TRANSPORTATION AUTHORITY
CONSTRUCTION OF PASSENGER TERMINAL BUILDING
PUERTO RICO INTERNATIONAL AIRPORT

1. RECEIPT AND OPENING OF BIDS.—Sealed bids in triplicate for the construction of Passenger Terminal Building at the Puerto Rico International Airport will be received by the Puerto Rico Transportation Authority, at the office of its General Manager at Building 53, Isla Grande Airport, San Juan, Puerto Rico until 2:00 o'clock P.M. Puerto Rico Time on the 13th day of March 1953 at which time and place all bids received will be publicly opened and read aloud.

2. WORK.—The work consists of the construction of the Passenger Terminal Building of several wings and extensions together with related work, including exterior utilities and paving. The Building includes elevators, control tower, food preparation and dispensing facilities fully equipped, to extent shown or specified, dining areas, hotel rooms, offices and other areas.

3. PLANS AND SPECIFICATIONS.—Contract documents, including Plans and Specifications are on file at the office of the Chief Engineer of the Puerto Rico Transportation Authority, at Building 53, Isla Grande Airport, San Juan, Puerto Rico. Copies of the documents may be obtained from the Puerto Rico Transportation Authority by depositing one hundred dollars ($100.00) with the Puerto Rico Transportation Authority for each set of documents. The amount of the deposit will be refunded upon return of the entire set of documents in good condition within twenty (20) days after the opening of bids. However, seventy-five dollars ($75.00) only will be refunded to bona-fide bidders for extra sets returned, and to those taking sets and not filing formal proposals. A set of contract documents will also be available for inspection at Civil Aeronautics Administration Office, 50-7th Street N.E., Atlanta 5, Georgia and at the offices of the Knappen Tippetts Abbett Engineering Company, 62 West 47th Street, New York, N. Y.

4. BID GUARANTEE.—A certified check or bank draft payable to the Puerto Rico Transportation Authority, U. S. Government Bonds, or a satisfactory bid bond executed by the bidder and acceptable sureties, in an amount equal to five per cent (5%) of the bid shall be submitted with each bid.

5. REJECTION OF BIDS.—The Puerto Rico Transportation Authority reserves the right to reject any or all bids and to waive any informalities in the bids.

6. WAGE RATES.—All bids shall be based on wage rates not less than the minimum wage rates as predetermined by the Secretary of Labor of the United States, schedule of which is included in the Specifications.

7. PERFORMANCE AND PAYMENT BONDS.—The successful bidder will be required to furnish satisfactory performance and payment bond or bonds.

8. ADDENDA: INTERPRETATION OF CONTRACT DOCUMENTS.—No interpretation of the meaning of the Plans, Specifications, or other Contract Documents will be made orally to any bidder. Every request for such interpretation must be in writing, addressed and forwarded to the Engineering Division of the Puerto Rico Transportation Authority. No inquiry received within five (5) days of the date set for opening of bids will be given consideration. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the Specifications and which, if issued, will be sent as promptly as practicable to all prospective bidders. All addenda so issued shall become part of the Contract Documents. Failure of any bidder to receive any such addendum shall not relieve him from obligation under his bid as submitted.

9. WITHDRAWAL OF PROPOSALS.—No proposal can be withdrawn after it is filed unless the bidder makes his request in writing or by telegram, or unless the Authority fails to accept it within thirty (30) days after the date fixed for opening bids. Written or telegraphic requests for withdrawal of proposals must be dispatched by the bidder in time for delivery in the normal course of business prior to the time fixed for opening bids. Telegraphic withdrawals must be confirmed in writing over the signature of the bidder within 48 hours thereafter. At the time of opening of the proposals, when such proposal is reached, it will be returned to the bidder unread.

10. STATEMENTS OF BIDDERS.—Prior to the time of the opening of bids all bidders are required to submit statements as to their financial condition, equipment proposed to be used in thhe work, experience on similar work, organization, and methods to be used in prosecuting the work. Blank forms will be furnished by the Authority for the convenience of the bidders, but the use of these forms is not mandatory provided the bidder furnishes the required information.

YOLANDO O'CORRIE,
GENERAL MANAGER

Bids: March 6, 1953

Furnishing of Sewerage Collection System

Sealed bids will be received by the City of Key West, Florida, at the City Hall, March 6, 1953, up to 8:00 P.M., Eastern Standard Time, at which time and place all bids will be publicly opened and read aloud. The bids will be based on the furnishing, delivering, installing and/or construction of Sewerage Collection System Improvements, Lift Stations, Force Mains and Ocean Outfall, within the limits of the City of Key West, Florida, and as shown on the Engineer's plans.

Additional information on method of bids can be secured in the offices of Clifford-Cooper & Associates, 101 Westward Drive, Miami Springs, Florida.

CITY OF KEY WEST, FLORIDA

Bids: February 27, 1953

General Construction Work

Separate sealed proposals for the: General Construction, Heating and Ventilating, Plumbing and Sanitary and Electrical work for the *East Islip Union School* on Montauk Highway, East Islip, Suffolk County, New York, will be received by the *Board of Education, Union Free School District No. 3 of the Town of Islip, Suffolk County* New York, in the Board Room of the school on February 27, 1953, until 8:00 o'clock P.M. E.S.T., at which time they will be publicly opened and read aloud.

The Information for Bidders, Form of Bid, Form of Contract, Conditions of Contract, Drawings and Specifications, and Forms of Performance and other Surety Bonds may be examined at the office of *Lorimer Rich and Associates, Architects*, 215 Montague Street, Brooklyn, New York, and copies thereof may be obtained upon deposit of $50.00 for the General Construction Set, and $25.00 for each of the Mechanical Trade sets. Such deposit will be refunded to any bidder duly submitting a proposal with the required bid security upon the return of such copy in good condition within twenty (20) days after the opening of bids.

The Board of Education, above named, reserves the right to waive any informality in or to reject any or all bids.

Each bidder must deposit with his bid, security in an amount not less than five per centum (5%) of the base bid in the form and subject to the conditions provided in the Information for Bidders.

Attention of bidders is particularly called to the requirements as to conditions of employment to be observed and minimum wage rates to be paid under the contract.

No bidder may withdraw his bid within 45 days after the date set for the opening thereof.

BOARD OF EDUCATION, U.F.S.D. No. 3
TOWN OF Islip, L. I., SUFFOLK CO., N.Y.

Bids: March 17, 1953

FOUR ADDITIONAL MAIN PUMPS, MOTORS AND ACCESSORIES
FREUD STORM WATER PUMPING STATION
DEPARTMENT OF PUBLIC WORKS
CITY OF DETROIT, MICHIGAN
CONTRACT PW-1071-AX

Sealed proposals for four additional motor driven pumps and accessories for the Freud Storm Water Pumping Station, located on Freud Avenue and Clairpointe, addressed to the CITY ENGINEER'S OFFICE, DEPARTMENT OF PUBLIC WORKS, of the City of Detroit, and endorsed: "Proposal for Contract PW-1071-AX" will be received at the OFFICE OF THE CITY ENGINEER, 30th FLOOR, GUARDIAN BUILDING, until 2:00 p.m., City of Detroit Time, on March 17, 1953, at which time they will be publicly opened and read aloud. Any proposal received after the above-mentioned time will be returned to the bidder unopened.

The work consists of the furnishing and installing of four main electric motor driven pumping units, each having a rated capacity of 425 cubic feet per second against a 45 foot static head; for a new storm water pumping station, which includes the pumps, synchronous motors, exciters and field cubicles.

The accessories consist, in general, of furnishing and installing all suction and discharge castings for the pumps, also ten flow meters, service piping for the pumps and motors. The contract also includes the removal of suction and discharge bulkheads for four pumps, and installing quarry tile and field painting.

The Contract Documents, including Notice to Bidders, Form of Proposal and Agreement, Drawings and Specifications may be examined at the Office of the City Engineer, 30th Floor, Guardian Building, Detroit 26, Michigan, during business hours and copies may be obtained by making a deposit of $10.00 per set, which sum will be refunded upon the return in good condition of the complete set of Contract Documents within one month after receipt of proposals, or if used in submitting a bona tide proposal.

Each proposal shall be accompanied by a certified check or a satisfactory bidder's bond in an amount not less than 5 percent of the total bid price, as security for the acceptance of the Contract.

All checks shall be made payable to the Treasurer, City of Detroit.

After the scheduled closing time for receipt of bids, no proposal may be withdrawn for at least 45 days.

The City of Detroit reserves the right to waive any informality in any bid, or to accept any bid, or to reject any or all bids, should it be deemed for its best interests so to do.

CITY OF DETROIT,
CARL D. WARNER
Commissioner of Public Works
G. R. THOMPSON, City Engineer

U. S. Government

GOVERNMENT OF THE DISTRICT OF COLUMBIA, DIRECTOR OF SANITARY ENGINEERING D. C., February 4, 1953. SEALED PROPOSALS will be received in 429, District Building, 14th and 'E' Streets, N.W. Washington 4, D. C., until 2:00 P.M., EASTERN STANDARD TIME, March 9, 1953, and then publicly opened and read for the construction of SECTION 2 OF EAST BRANCH PINEY BRANCH TRUNK SEWER, vicinity of 14th and Randolph Streets, N.W., Washington, D. C. This project consists of the following: In Open Cut—75 linear feet 18'0" x 10'0" brick and reinforced concrete masonry sewer; 95 linear feet 15'0" diameter brick and reinforced concrete masonry sewer; 28 linear feet transition sections; 2 special manholes. In Tunnel—1,895 linear feet 15'0" diameter brick and concrete masonry sewer; 45 linear feet 3'0" diameter brick and concrete masonry sewer; 16 linear feet transition sections. Proposal forms, drawings, and specifications may be obtained, upon the deposit of a certified check in the amount of Fifty Dollars ($50.00), from Secretary, Contract Board, D. C., Room 429, District Building. (Telephone National 8-6000, Extension 2307)

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OFFICIAL PROPOSALS

Bids: March 7, 1953

New Municipal Building and Library, Westfield, N. J.

Sealed Bids will be received by the Mayor and Council of the Town of Westfield at the Municipal Building, 121 Prospect Street, Westfield, New Jersey, on Saturday, March 7, 1953 at 10 A.M. for the construction of a new municipal Building and Library, together with incidental work in connection therewith.

Bids will be taken separately for (1) General Construction, (2) Structural Steel and Miscellaneous Iron, (3) Heating and Ventilating, (4) Plumbing, (5) Electrical Work.

Drawings and specifications for the proposed work, prepared by Ray O. Peck, Architect are on file in the office of said Architect at 1 Park Drive, Westfield, New Jersey and at the office of the Town Clerk in the Municipal Building, Westfield, New Jersey and may be inspected by prospective bidders during business hours. Bidders will be furnished with a copy of the specifications and plans by the Architect on proper notice and payment of ($25.00) twenty-five dollars, which payment will be refunded to the person, firm or corporation making a legal bid and returning the plans and specifications in good order within ten days after the bids are received.

Bids must be made on standard bid form in the manner designated by the specifications, must be enclosed in sealed envelopes, bearing the name and address of the bidder and the branch of work covered by the bid on the outside, addressed to the Mayor and Council of the Town of Westfield, New Jersey and must be accompanied by a certified check, made payable to the Treasurer of the Town of Westfield, for ten (10) per cent of the amount bid, providing said check shall be not more than $50,000, and be delivered at the place and on the hour above named. Bids must also be accompanied by a surety company certificate stating that said surety company will provide the bidder with the required bond.

Bids made which are contingent upon the acceptance of any other bid will be rejected and the Mayor and Council reserves the right to reject any or all bids, if, in the interest of the Town, it is deemed advisable to do so.

Jane F. Jones
Town Clerk

U. S. Government

GOVERNMENT OF THE DISTRICT OF COLUMBIA, DIRECTOR OF HIGHWAYS, D. C., January 29, 1953. SEALED PROPOSALS will be received in Room 429, District Building, 14th and E Streets, N.W., Washington 4, D. C., until 2:00 PM, February 26, 1953, EASTERN STANDARD TIME, and then publicly opened and read for constructing one (1) overpass, four-hundred (400) lineal feet of depressed roadways, retaining walls and a trunk sewer in the vicinity of East Capitol Street and Kenilworth Avenue, N.E., respectively. Approximate quantities of major items in the overpass, the ramps and depressed roadways are: 65,100 cubic yards of excavation, 59,400 lineal feet of treated timber piles, 3,320 cubic yards concrete, 271,000 pounds reinforcing steel and 186,000 pounds structural steel. Approximate quantities in the 15'x10'6" trunk sewer are: 36,000 lineal feet of treated timber piles, 22,000 cubic yards excavation, 4,560 cubic yards concrete, and 604,000 pounds reinforcing steel. Proposal forms, plans and specifications may be obtained from the Secretary, Contract Board, D.C., Room 429, District Building, upon the deposit of a certified check made payable to the Collector of Taxes, D. C., in the amount of Fifty Dollars ($50.00). Telephone NAtional 8-6000, Extension 2307.

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CIVIL ENGINEER desires position with Consultant or Engineering Department. Degree, experienced construction, estimating, limited design. Age 31. Married. Prefer Mid-west or Texas. P-6783, Engineering News-Record.

COMPUTOR AND general office man, experienced in subdivision and property surveys for an old established concern. George H. Walbridge Co., Babylon, Long Island, New York.

DRAFTSMAN WANTED—Experienced for detailing miscellaneous and/or structural steel by Bushnell Steel Company, P. O. Box 2579, Jacksonville, Florida. Reply giving brief resume of experience, education, availability, and salary expected.

ENGINEERS EXPERIENCED in water and sewage works projects or related fields. Opportunity for permanent connection with long established consulting firm. Please state full qualifications, experience, references and salary requirements. Location Ohio. P-6733, Engineering News-Record.

EXPERIENCED STRUCTURAL steel lay-out man and fitter for established plant on the Eastern Shore of Maryland. State experience, present duties and compensation. Replies strictly confidential. P-6818, Engineering News-Record.

REQUIRED FOR Southwest experienced draftsman for design and detailing wood and steel structures, foundations, reinforced concrete and other allied work. Pleasant working conditions. Pension and insurance benefits. Personal traveling expenses refunded. Apply by letter with full details, age, education, experience, etc., to American Smelting and Refining Company, 1112 Mills Building, El Paso, Texas.

SELLING OPPORTUNITIES OFFERED

WANTED SALES Engineer with structural experience to call on Architectural and Engineering firms in North Carolina for old established concern. Salary and Commission. State qualifications and experience first letter. Reply to SW-6597, Engineering News-Record.

MANUFACTURER'S REPRESENTATIVE for complete new line of electric hammer, drills, points, chisels, etc. Will return large volume with high profit. Excellent repeat business. Write or call: Allied Tools Incorporated, 321 Central Ave., Newark 4, N. J. Phone, Market 3-1412.

C.E. GRADUATE with 2 years experience in building construction supervision. Some experience in sewer and waterline design and installation. Desires job with contractor engaged in large project. Write PW-6591, Engineering News-Record, Chicago, Illinois.

CIVIL-STRUCTURAL Engineer, P.E.—licenses in various states, over 25 years of wide experience U. S. and abroad, on large industrial and architectural structures, and bridges of magnitude, desires position in charge of work or association with expanding company, here or abroad. PW-6767, Engineering News-Record.

(Continued on page 68)

STRUCTURAL STEEL SALES ENGINEER

Exceptional opportunity for a thoroughly experienced structural engineer who can estimate & sell structural steel for all types of buildings, fabricated & erected.

Plant is long established, has large capacity, located in metro N. Y. area. State experience & salary for personal interview at our expense.

SW-6708, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

INDUSTRIAL AND COMMERCIAL
BUILDING PRODUCTS SALES REPRESENTATIVE

Must have experience in dealing with engineers, general contractors, and sub contractors—ability to promote and develop sales in the Industrial and Commercial building material field. Must know trade terminology of this field and be experienced in channels of distribution. We prefer man with at least five years' experience, capable of operating with a minimum of management supervision. This is an excellent opportunity to become associated with an expanding, internationally-known company.

Reynolds Metals Company
Parts Division

Send complete resumé to C. B. Grossman, Personnel Director, 2000 South Ninth, Louisville, Kentucky.

DISTRIBUTOR OR ENGINEERING REPRESENTATIVE. NATIONAL CHAIN LINK FENCE MANUFACTURER. SEVERAL FRANCHISES AVAILABLE FIRST OF YEAR.

RW-6367, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

WANTED
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with bar joist experience in estimating selling setting up agents and distributors to make headquarters in New York City. Extensive travel required (Western States excluded). State salary now earning and expected.

SW-6500, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

SUPERINTENDENTS WANTED
Prestressed Concrete Work

Experience in Concrete Construction essential. Need not be Graduate Engineer. Travel throughout U. S. Some overseas assignments if desired after special training. Submit complete qualifications, availability, etc.

P-6753, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

WANTED
HEAVY CONSTRUCTION ESTIMATOR

Field Background. Pittsburgh Area. Advise Particulars. Write:

JOHN F. CASEY CO.
BOX 1888 PITTSBURGH 30, PA.

Wanted

EQUIPMENT MANAGER

General Supt. of Maintenance

Chicago Company 1 operating several maintenance shops and large quantities of heavy construction equipment seeks the best qualified man to take the top responsibility for all maintenance costs.

Applicant must have background of proven executive ability and accomplishment with master mechanic training. Please give detailed qualifications including age and last salary.

P-6834, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

WANTED

TIMEKEEPER—for New York Metropolitan Area. Occasional out of town travel. Single experienced man with car and steel erection background preferred.

TIMEKEEPER—for work on Atlantic Coast Area mainly New England to Virginia. Must travel. Single, experienced man with car and steel erection background preferred.

Wanted by progressive independent steel fabricator and erector located in Pennsylvania.

P-6718, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

EXECUTIVE ELECTRICAL ENGINEER

Position presently open with heavy industrial electrical contracting firm. Work highly competitive and nation-wide in scope, with headquarters in San Francisco Bay Area. Age 35 to 50. Must have at least 15 years experience in electrical estimating and heavy construction, and with at least 5 years in a managerial capacity. Send complete details on qualifications, experience, references and salary requirements to:

P-6804, Engineering News-Record
68 Post St., San Francisco 4, Calif.

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Experienced in power and process piping, including material take-off, pipe shop fabricating methods and costs.

Permanent position with excellent opportunity. Work location: Pittsburgh, Pa. All replies acknowledged and kept confidential. Please send complete details of age, education, experience and salary requirements to Staff Advisor for Personnel Procurement,

DRAVO CORPORATION
Dravo Building, Pittsburgh 22, Pa.

WANTED

GENERAL PAVING SUPERINTENDENT
CHICAGO AREA

Aggressive, imaginative, fast-moving organizer to handle asphalt resurfacing, concrete roads and storm sewer systems. Excellent opportunity for experienced man. Top salary and bonus.

P-6363, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

WANTED:

Marine Construction Superintendent

Age 35 to 40, C.E. Degree, with at least ten years experience in heavy construction such as bridge foundations, breakwaters, piers and docks. Must have had considerable time in full charge of projects. Permanent position. Salary $6500 to $7500 with Life Insurance, Hospitalization and Retirement Benefits. Location Middle West.

P-6815, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

POSITIONS WANTED

(Continued from preceding page)

CONSTRUCTION MANAGER or Project Manager available March 15th. Over 25 years diversified experience as Construction Manager and Project Manager on foreign and domestic work. Outstanding record in dams, power plants, hydro and thermal, water front work, air bases etc. as well as over-all management, supervising all departments of jobs. Highest references. PW-6789, Engineering News-Record.

CONSTRUCTION MANAGER or Project Manager. Available after Mar. 15, 1953. 22 years highway, airfield, and other heavy construction. Graduate Civil Engineer with experience as both Engineer and Constructor at top level. Thorough knowledge of soils, concrete, and asphalt work including design. Have handled construction under most extreme difficulties and have unsurpassed record of performance with earnings exceeding $20,000 per year. Some knowledge of Spanish, French, and Portuguese. State-wide or foreign. Age 42 years. PW-6553, Engineering News-Record.

ENGINEERING MANAGER background in complete Plant Design, preparation and analysis of budgets for industrial installations. Bulk of experience in detergents, Pharmaceuticals and organic chemicals. PW-6457, Engineering News-Record.

ENGINEER-REPRESENTATIVE: Engineering and construction; industrial and public works. Wide experience U.S. and abroad. Contract negotiations, sales, liaison, coordination, management. Available to reputable firms on associate or consulting basis. Address "Engineer", P.O. Box 2822, Washington 13, D. C.

EXECUTIVE ENGINEER, P.E., N. Y. State and others, 50, experienced administration engineering projects. Chemicals, petroleum, rubber, hydro-electric plants. Structural, hydraulic, mechanical, industrial and related problems. Design, construction. Past affiliations consulting and industrial. Salary over $12,000. Available April. PW-6820, Engineering News-Record.

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Construction Manager with long successful record in charge of estimating, bidding, and supervision of all types of Heavy Construction Projects—in particular Sewage Disposal and Water Filtration Plants—desires permanent connection. Best of references.

PW-6703, Engineering News-Record
330 West 42 St., New York 36, N. Y.

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ESTIMATOR—GENERAL Contractor—Quantities, piece, competitive bids, industrial, public, commercial, complete office details, buy, schedule, expedite, job costs, handle subs. Long experience, excellent record. PW-6809, Engineering News-Record.

FIELD AND/or office engineer. 25 years experience. Any type of building, industrial, plant or other heavy construction. References the best. Now finishing large well known job. PW-6768, Engineering News-Record.

GENERAL PAVING superintendent, office man, full paving crew, for concrete roads and asphalt resurfacing, 20 years experience. PW-6812, Engineering News-Record.

GENERAL SUPERINTENDENT—Heavy construction earth fill dams, roads, air bases. Familiar with all phases of construction including asphalt & concrete paving. Good organizer & fast moving. Have Following. PW-6788, Engineering News-Record.

HEAVY CONSTRUCTION Supt. extensive experience on rock blasting, earth moving and concrete. PW-6721, Engineering News-Record.

MECHANICAL SUPERINTENDENT 27 years experience all phases mechanical maintenance; all classes heavy construction, mining, open pit, milling, smelting, railway and truck transportation. Speak Spanish fluently, will accept domestic or foreign assignment. PW-6715, Engineering News-Record.

MATERIALS ENGINEER: Graduate, over 20 years experience in design and construction, 15 in concrete control, soils mechanics and concrete pipe. Desires permanent connection, Western U. S. preferred. Resume on Request. PW-6810, Engineering News-Record.

PROJECT MANAGER or General Construction Supt., 47, Civil Engineer, 25 years construction experience, water and Sewerage systems. Multiple story bldg., Commercial and Water front, Highways and Bridges. Sober, aggressive and reliable. PW-6752, Engineering News-Record.

SELLING OPPORTUNITY WANTED

MANUFACTURER'S REPRESENTATIVE with background of Architecture and Civil Engineering desires additional accounts. Location—Pittsburgh including upper West Virginia, Eastern Ohio and Western Penn. Suggested: Hollow metal and Kalamein doors, aluminum doors and windows, any industrial product considered. Will not warehouse. RA-6731, Engineering News-Record.

WORK WANTED

Field Work and plans on: Electrical transmission, Highway, water and sewer systems. Wilson Engineering Co., Glasgow, Ky.

Structural Detailing personnel select as trained by American Bridge, Pittsburgh Steel &Iron, etc. Quantity Survey any phase of any industrial product. Office located in Pittsburgh, Pa. WW-6732, Engineering News-Record.

WANTED

Want structural, mechanical, plant layout, tooling, civil or any combination of these. Approximately 300 man hours per week available. Registered in Indiana, Michigan, and Ohio. WW-6773, Engineering News-Record.

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List your equipment with us for quick sales. We also store your equipment in our yard for a small fee until sold if you desire. *Consult us for your equipment needs.*

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CLASSIFIERS: 4—Akins and Wemco 54" x 33 ft. simplex, single screw, high weir, with syncrogear motor, 220/440 volt, with lifting device. Condition like new, available now. Located Nevada.

OVERHEAD ELECTRIC TRAVELING CRANE: Shepard Niles 7½ ton, 80 ft. span, 4 motor, bucket operating, 440 volt, A.C., cage control, in operation now, offered with or without 2½ yd. clam shell bucket. New condition.

LOCOMOTIVE CRANE: Link Belt 25 ton capacity, standard R. R. gauge, gasoline powered, cast steel trucks, air brakes, with or without 1¼ yd. Williams clam shell bucket, thoroughly modern, excellent condition. Located Minnesota.

CAR DUMPER: Link Belt, will dump standard R. R. gondola cars up to 90 tons capacity, transfer table 54 ft. Specifications and photos available.

COMPRESSOR: Worthington DC2, 29/18½ x 21, motor 600 H.P. synchronous, 440 volt, with all auxiliary equipment.

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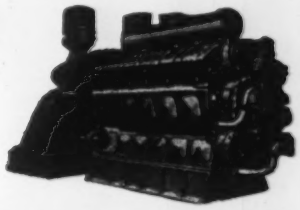

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KW	Make	Model	HP	RPM	KW	Make	Model	HP	RPM
1980	Nordberg	TS-217	2800	225	320	Enterprise	DSG-6	560	450
1500	Fairbanks Morse	33E16	2000	300	300	General Motors	8-268A	450	1200
1136	Fairbanks Morse	38D	1600	720	250	Fairbanks Morse	37-E	375	360
1100	General Motors	16-278A	1600	720	200	General Motors	8-268A	350	900
750	General Motors	12-567	1080	720	150	Worthington	CC-4	225	450
500	Baldwin	VO-8	750	514	150	Buckeye	80	240	600
500	General Motors	8-278A	750	720	100	Worthington	BB-5	150	600
500	General Motors	8-567	720	720	100	General Motors	3-268A	150	1200
400	Ingersoll-Rand	8-8	600	720	60	General Motors	6-71	90	1200
350	Baldwin	VO-6	510	450	30	Internat'l Harvester	UD-14	45	1200

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1—Bucyrus Erie Model 10-B, ⅝" crawler Backhoe.
1—Allis Chalmers Tractor with angledozer, Model HD7, only 4 yrs. old.
1—Caterpillar Tractor with Cat. DD-PCU and Angledozer, late model, D7.
1—Caterpillar Tractor D6 with Cat. DD-PCU and Angledozer, late model.
1—Lima 1 yd. dragline, only 1½ years old, diesel.
1—500' Ingersoll Rand Air Compressor mounted on rubber tires.
1—Lorain TL-20, ½ yd. self propelled shovel, 4 yrs. old.
1—Bucyrus Erie 22-B, ¾ yd. dragline, 1952 model, diesel, 900 hours.
1—Unit ½ yd. shovel, 1951 model, only 700 hours.
1—Osgood Truck Crane 10 to 15 ton capacity.
1—Autocar 1946 model with Rogers 20 ton low boy trailer.
1—Caterpillar D8 Tractor with cable controlled angledozer, 2U series.
1—Lorain T1-20 (TL-20) Truck Crane, late model, like new.

"Above Equipment in Excellent Condition."
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Model 4300 Manitowoc Draglines, caterpillar-mounted, with 140 booms', buckets, Caterpillar engines, 5 cu. yd. 100-ton capacity, one and two years old.

Model 3500 Manitowoc Speedcrane, Lift-crane, clamshell, dragline combination, 2½ cu. yd. 60-ton capacity, new October, 1950.

Model 803 Koehring Liftcrane, Clamshell, Dragline combination, 2 cu. yd. 50-ton capacity.

All located in Florida. Reply to

FS-5844, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

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65 ton G.E. Diesel Elec. Locomotive.
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1½ yd. Koehring 605 Diesel Crane 140' Bm.
30 ton Ind. Brownhoist Gas Loco. Crane.
½ yd. Link-Belt LS-50 Shovel-Backhoe-Crane.
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130 HP Christian 2D Diesel Hoist.
1035 CFM I.R. Air Comprs. New 1949.

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1—25-ton Bay City Truck Crane, 130' Boom, new 1952
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1—WHITCOMB-0-4-0-STD. GA, 50 TON DIESEL ELEC.—BARGAIN

1—Lima 1201 Shovel—New 1950.
1—Link Belt K-570 Shovel—New 1950. Bargain.
3—Hopper Cars—50 Ton. Excellent. STD. GA.
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Southwark 500 Ton Hydraulic Press—High Speed—Like New.

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1 Model K595 Link-Belt Speeder diesel crane dragline, DI7000 Cat. Engine, 90 ft. double sheave boom, fairleader. Completely rebuilt to new condition.

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12" Snatch Blocks with Hooks	$13.50
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#32 Drop Forge Hooks, New	2.00

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1—Northwest Model 41 Crane & Dragline—1 yd. capacity—45 ft. Boom w/Caterpillar D 8800 Diesel engine—Perfect condition—used very little. $24,500.00
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1—Northwest Model 25 Crane, Dragline, Pullshovel, 35 ft. Boom & fairlead—Wide Crawler treads—GM 371 Diesel engine..... $14,250.00
1—International TD-14 Angledozer W/wide Crawler pads & Electric lites—Very good shape ready to go to work..... $6,750.00

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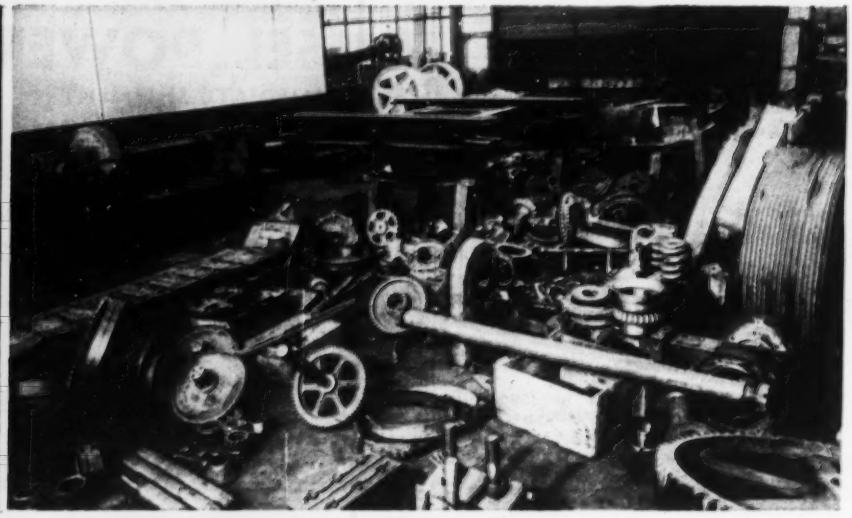

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can be done on your equipment, too!!!

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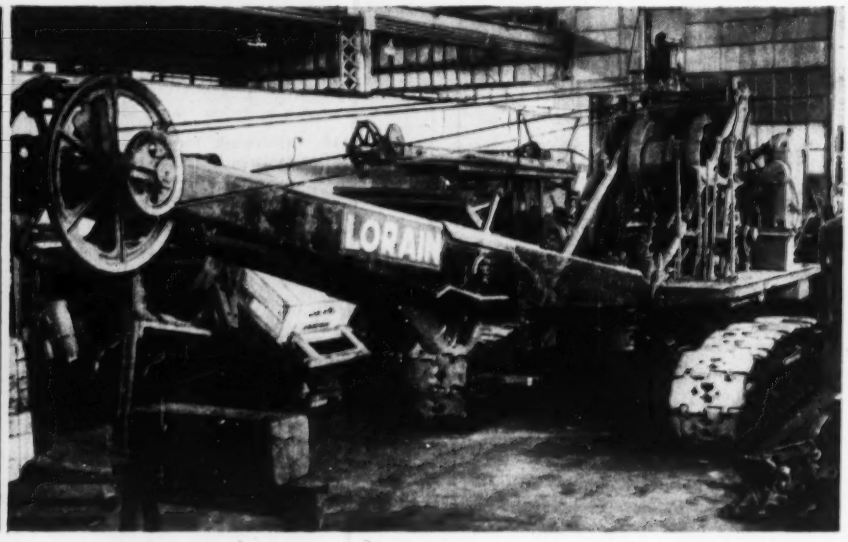
L. B. SMITH rebuilds equipment, it is ready for many years of further use. Wherever possible, new design is incorporated into the rebuilt machine, increasing the productive capacity. And, since under and oversizing shafts, bearings, etc. is frowned upon, no trouble is experienced in future maintenance.



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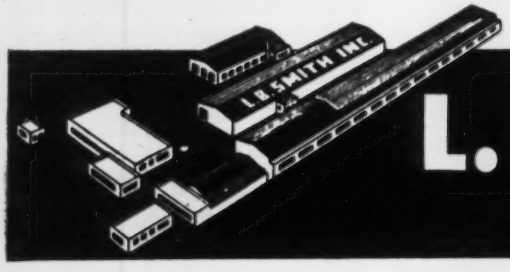
Have you equipment we can rebuild?
You are invited to use our facilities — the world's largest equipment rebuilding facilities . . . where rebuilding is a business — with over 25 years of experience on all types of construction equipment — where trained mechanics with precision tools — can build back into your equipment many years of additional and efficient usefulness — using the same thoroughness employed in rebuilding our own used equipment. Write today



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New and Used Equipment News

Prepared Monthly by Ed Woolford at Camp Hill, Pa.

VOL. 1 NO. 10

AIR COMPRESSORS

Gardner-Denver 500 cu. ft. diesel, new condition.
Gardner-Denver 500 cu. ft. diesel, good operating condition.
Worthington two-stage, water-cooled, vertical 250#, 60 CFM, new condition.
Paving breakers, jackhammers, wagon drills, tie tampers.

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2540 Cedarapids AAAA primary unit on rubber, diesel power. Rebuilt.
2036 Cedarapids AAA primary unit on rubber, diesel power. Rebuilt.
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Cedarapids Rock-It plant w/2025 jaw, 3033 hammermill. New.
1236 Cedarapids Model 6C plant. New.
4033 Cedarapids Model 6C plant. New.
2020 Cedarapids double impeller. New condition.
4024 Cedarapids roll. Rebuilt.
3018 Cedarapids roll. Rebuilt.
1236 Cedarapids twin jaw crusher. New.
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#1 Cedarapids Kubit impact breaker. New condition.
B-3 Jeffrey swing hammer pulverizer. Rebuilt.
42" x 10' Cedarapids feeder.
4' x 8' Kennedy Van Saun single deck screen.
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60" dia. x 14' long Traylor revolving screen. Rebuilt.
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15 cu. yd. Cedarapids sand drag. New.
16" x 90' bucket elevator.
60-ton, 2-compartment, 8' x 18' storage bin w/clam gates.
100-ton, 2 compartment, 13'x23' storage bin.
Special bins to your specifications.
Conveyors—18"—24"—30"—36". Also belt.

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1½-ton Ford with any body.
2000-gallon tanks on semi-trailer mounting.
New and rebuilt dump bodies.

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1½ KW to 125 KW, alternating and direct current gasoline and diesel powered.

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Lorain L-82, 2-yd. diesel.
Lorain 77, 1½-yd. diesel.
Lorain 75B, 1¼-yd. diesel.
Lorain L-50-1, 1-yd. diesel.
Lorain 40 truck crane on Mack 3-axle truck.
Buckeye ¾-yd. diesel.
Unit 514, ½-yd. gasoline crawler shovel, rebuilt.
Lorain 30A, ½-yd. gas combination.

SHOVEL & CRANE ATTACHMENTS

Lorain L-41 Chain Crowd Shovel Attachment. Rebuilt.
Lorain 40 Hi-Lift shovel attachment.
P&H 203 shovel attachment.
Chain crowd Lorain 30A shovel attachment.
Bucyrus-Erie 1½-yd. rock bucket.
McCaffrey Model 648 for 1¼ to 2-yd. crane.
McCaffrey Model 636 for ¾-yd. to 1-yd. crane.
Lorain 77 crane boom, 45'.

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Lorain 30 hoe attachment complete.
¾-yd. Lorain, 40, LBS #6105. 44" cutting width.
¾-yd. Amsco 40" cutting width, LBS #8101.

CLAM—DRAG—SCRAPER BUCKETS

LIFTING MAGNETS

1—45" Ohio lifting magnet, rebuilt.

SHOVEL DIPPERS

Lorain 41, ¾-yd. LBS #8600, rebuilt.
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Bucyrus-Erie 1¼-yd. gas air, LBS #3782, fair.
Lorain 75B, 1½-yd. manganese bucket, LBS #8538.
Lorain 75B, 1¼-yd. extended lip, 1¾-yd. LBS #2260.
Pettibone-Mulliken 2-yd. Lorain 82 or 820, manganese, LBS #5361.
Pettibone-Mulliken 2-yd. for 3500 Manitowoc LBS #5763.
Esco 2½-yd. cast weld dipper with bail & teeth.

CONCRETE EQUIPMENT

Blaw-Knox gas-electric finisher, 10½'-12½', rebuilt.
Koehring 10'-12' finishers, rebuilt.
Cleveland formgrader, new 1944 rebuilt.
Corr formgrader, new 1944, rebuilt.

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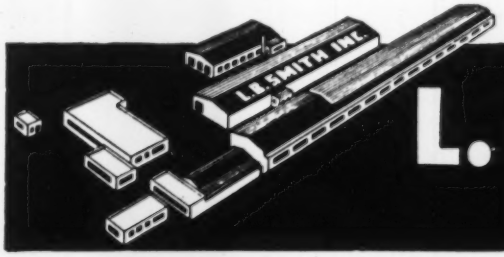

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Aberthaw Co., The 69
Ace Construction Co 74
Albert Pipe Supply Co., Inc 72
American Air Compressor Corp 73
Anderson Equipment Co 74
Bendix Machinery Co., Inc 72
Boyer, R. H 69
Brandeis Machinery & Supply Co 72
Buff 75
Carlyle Rubber Co., Inc 73
Casey Co., John F 67
Clauss & Sons, Felix 72
Clemens Construction Co 73
Contractors Machinery Co 69
Contractors Sales Co., Inc 73
Darien 73
Deatherage Son, George E 68
Diesel Motors Co 73
Drachman Steel Corp., Hy 72
Dravo Corporation 68
Dyer Co., Inc., W. H 74
Ehrbar, Inc., Edward 73
Fehrs Tractor & Equipment Co 74
Finest Construction & Equipment Corp. 68
Forsythe Equipment Co 73
Foster Co., L. B 72
Frank, M. K 74
Frazier-Davis Construction Co 73
Gargaro Construction Co 69
Gillis & Co 74
Greenpoint Iron & Pipe Co 72
Greensburg Machine Co 69
Gurley, W. & L. E 75
Hansen & Sons, Inc 72
Hickerson, Roy D 75
Jackson Machinery Co 69
Johnson & Son, Inc., H 72
Judge & Co., Inc., Frank M 72
McCarrick Brothers Inc 73
Midwest Steel Corp 74
Mississippi Valley Equipment Co ..69, 72
Morrison Railway Supply Corp 74
National Blue Print Co 75
O'Neill, A. J 69
Phillips & Davies Inc 67
Phillips Co., Charles J 74
Reynolds Metals Co 67
Richardson & Gordon 68
Schoonmaker Co., Inc., A.G 69
Smith Inc., L. B 70, 71
Southern Machinery & Equipment Co.. 69
Stanhope Inc., R. C 72
Stock Construction Co 74
Stone the Crane Man 69
Tagco Inc. 72
Visionfine Co., The 75
Warren-Knight Co. 75
Weiss Co., B. M 69, 74
White Co., David 75
Williams Construction Co 73, 74
Wilson Engineering Co 68
Wire Rope Trading Co 69

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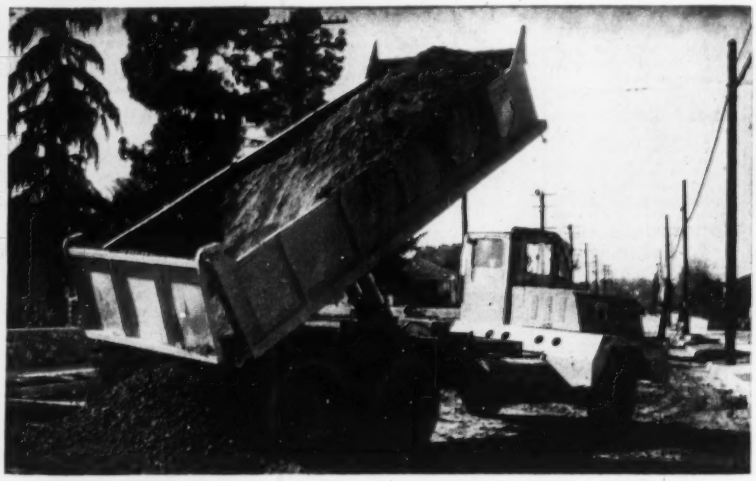
On thousands of earthmoving jobs, Sauerman Scraper machines equipped with the unique Crescent bottomless bucket, are cutting costs in digging, hauling and dumping almost every kind of material.

A "Crescent" penetrates tough materials with ease, gets a full load quickly, hauls this load at average speed of 400 f.p.m.—all with economical use of power. And it dumps automatically at end of haul.

Write for illustrated catalog J.

SAUERMAN BROS., INC.
532 S. CLINTON ST. CHICAGO 7, ILL.

NEW PRODUCTS



Cook Bros. M-310 is a dump truck designed especially for contractors

Features work together to yield maximum payload and maximum maneuverability on shorter wheelbase

With a set of telescoping sleeves replacing any levers, arms or cams, the powerful hydraulic hoist on this Cook Bros. M-310 makes short work of dumping a 15-ton load of backfill on a sewer job in East Los Angeles. Prettiness has yielded to ruggedness on this truck that's been especially designed for contractors' dump work.

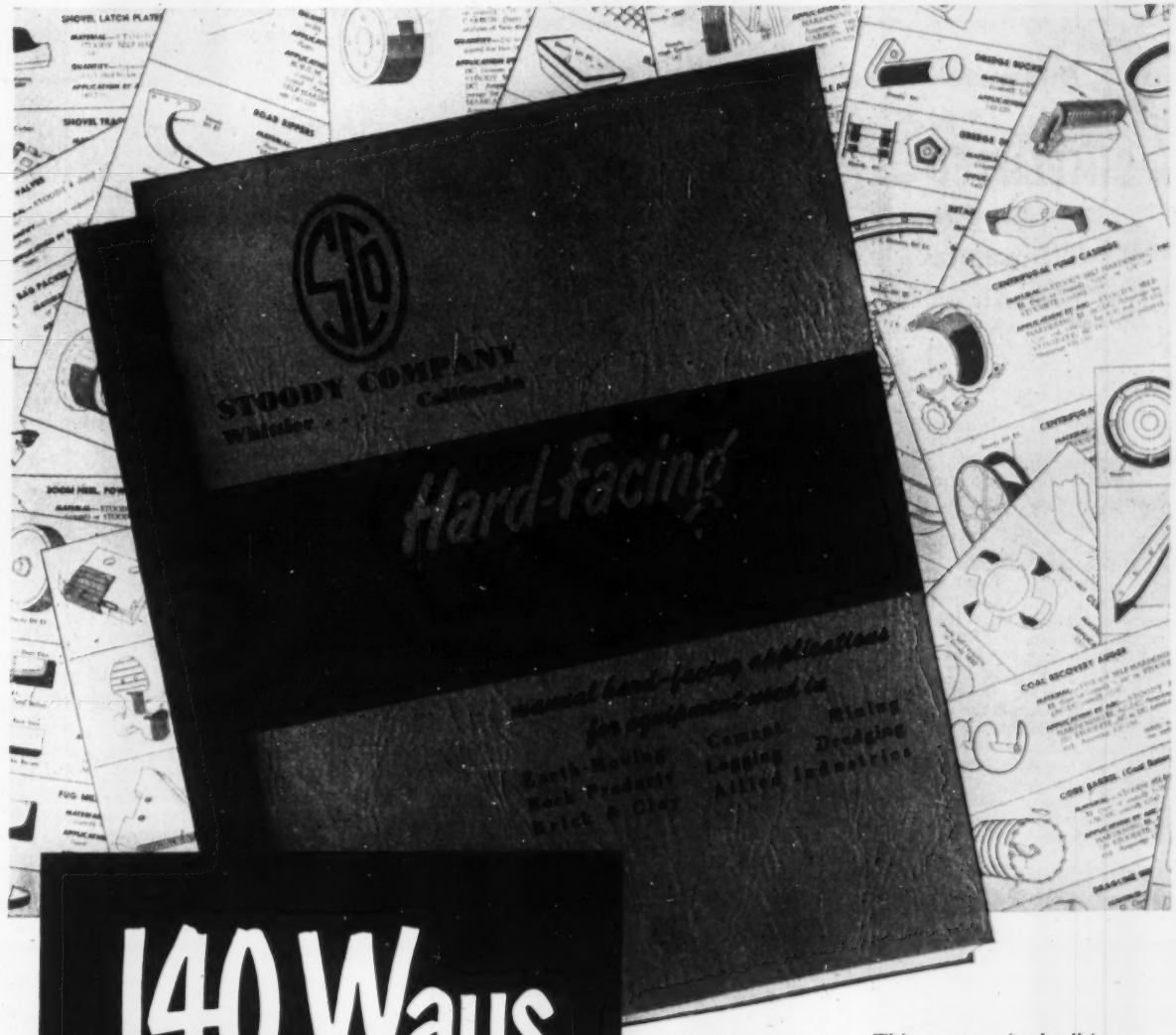
The single-passenger cab provides a completely unobstructed view and contains an hydraulically-suspended seat and oversize steering wheel (with optional power steering). Next to the cab a one-piece steel hood covers a Ford 317 V-8 engine of overhead valve design and 155-hp rating. Rigs can be had in dual gear drive, dual center chain drive or double-reduction axle with third axle attachment.

Wheelbase measures 174 in. between centerlines, but this measurement can be changed to meet necessary state specifications. At that measurement total legal payload is considerably increased, however, by shifting some of the weight to the heavy-duty front axle. Chassis is of braced steel members. All component parts of engine, steering mechanism, axles, transmissions and drive units have been built, according to the manufacturer, for rugged service, easy maintenance and ready replacement. Brakes are full air. The contractor using the truck in the photo above is Garvey Constructors of San Gabriel, Calif. Cook Bros. Equipment Co., 1815 N. Broadway, Los Angeles, California.

Firing indicator diagnoses all kinds of spark plugs

Built in the shape of a fat pencil, the spark plug firing indicator shown here is being marketed by Champion Spark Plug Co. It provides a fast, effective check of voltage being supplied to plugs, helps diagnose ignition ailments.

(Continued on page 77)



140 Ways

to cut replacements

increase equipment life

HOT OFF THE PRESS... This new, revised edition of the famous *STOODY HARD-FACING GUIDE BOOK* covers manual hard-facing procedures for all types of heavy equipment—actual methods developed and used today by maintenance men all over the country! Here in one book is the combined experience of thousands of operating men in earth-moving, mining, cement, brick and clay, construction and similar industries.

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No cost, no obligation; just fill in and return the attached coupon or request the GUIDEBOOK on your letterhead! Also, if you are interested in automatic welding for rebuilding and hard-facing, we'll be glad to include information.

STOODY COMPANY
11976 E. Slauson Avenue, Whittier, California

76 Please send FREE COPY of the new STOODY HARD-FACING GUIDEBOOK ☐

Include information on Automatic Rebuilding and Hard-Facing ☐

NAME_____

TITLE_____

COMPANY_____

STREET_____

CITY_____ STATE_____

Interested in SIMPLIFIED Sludge Digester Heating?

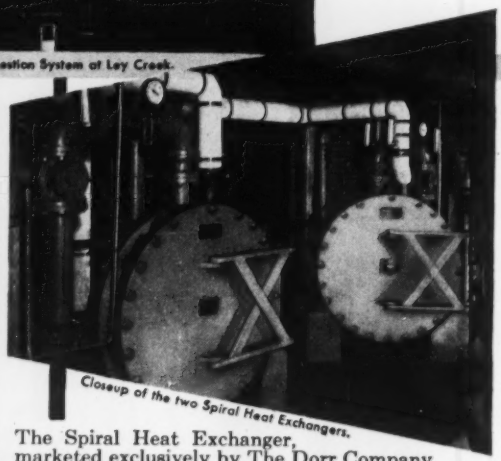
In late 1950, two Spiral Heat Exchangers, each with a rated capacity of 200,000 BTU/hr., were installed at the Ley Creek Sewage Treatment Plant, Syracuse, N. Y.

Reports direct from the Superintendent of the plant conclusively state that the units have operated successfully since initial start-up in January 1951 . . . that there has been no plugging in the Exchangers . . . and that they have done a very good job of heating the digesters, as shown by the data below.

General View of the Dorr Multdigestion System at Ley Creek.

At the Ley Creek Sewage Treatment Plant, Syracuse, N. Y., separate sludge digestion is carried out in a Dorr Multdigestion System with two Primaries and one Secondary. Each Primary is heated by a Spiral Heat Exchanger utilizing cooling water from a gas engine as the heat source. Operating data — for a twelve months period — is summarized below:

Number of units: 2; Rated capacity/unit-200,000 BTU/hr.
Avg. heat transfer—Exchanger #1—223,000 BTU/hr.
Avg. heat transfer—Exchanger #2—261,000 BTU/hr.
Maximum transfer recorded—485,000 BTU/hr.
Minimum transfer recorded—91,000 BTU/hr.



Closeup of the two Spiral Heat Exchangers.

The Spiral Heat Exchanger, marketed exclusively by The Dorr Company in the sanitary engineering field, is a simple, compact, highly efficient method of heating sewage digesters. For further information, including design capacities and sample specifications, write for Bulletin No. 6281, The Dorr Company, Stamford, Connecticut.

Multdigestion is a trademark of The Dorr Company, Reg. U. S. Pat. Off.

Better tools TODAY to meet tomorrow's demand

DORR

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FOR • STEEL PLATE LINING • STEEL ENCASEMENT • BUILDING NEW WALLS • LINING WATER RESERVOIRS, TUNNELS AND SEWERS • PLATE LINING OF STEEL STACKS, BUNKERS, DUCTS •. REPAIR OF DISINTEGRATED CONCRETE AND MASONRY • CANAL, DITCH AND DRAIN LINING

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Diamond and Shot Core Borings
Dry Sample Borings
Grout Holes and Pressure Grouting
Foundation Testing for Bridges, Dams and other Heavy Structures

Manufacturers, also, of Diamond Core Drilling Machines and complete accessory equipment, including all types of Diamond Drilling Bits. Ask for Bulletin 320.

SPRAGUE & HENWOOD, Inc.
Dept. E, Scranton 2, Penna.

NEW PRODUCTS

A needle probe is supplied with a metal sheath which serves as a test terminal. In testing voltages, a single brilliant flash of the neon tube each time the plug fires indicates normal ignition and full voltage build-up. In the case of resistor-type plugs, normal ignition characteristics are indicated by single flashes of medium intensity.

Very weak but uniform flashing indicates complete fouling; weak flashing, becoming intermittent as engine speed is increased, indicates partial fouling. Uneven flashing intensity with increased speed indicates faulty breaker points, coil, condenser or cable connections. Faulty cable insulation can be detected by running the indicator along a cable. One other condition uncovered by the tester is the induction of voltage from nearby cables. The indication in this event is additional firing between main flashes and the condition is remedied by separating the cables. CHAMPION SPARK PLUG CO., TOLEDO, OHIO.

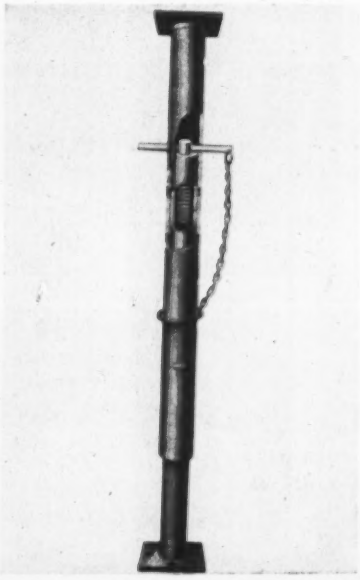
Adjusting screw on shore is completely encased

This cutaway view shows how the adjusting screw on the Marvel shore is encased to protect it from sand, concrete splashings, weather and dirt. It's said to be the only prop that is thus encased.

Another feature pointed to with pride by the company is the fact that the inner steel tube has no projections to possibly injure a workman when lowering or raising the shore.

Inner and outer tubes are of seamless drawn steel. The locking pin is

(*Continued on page 81*)



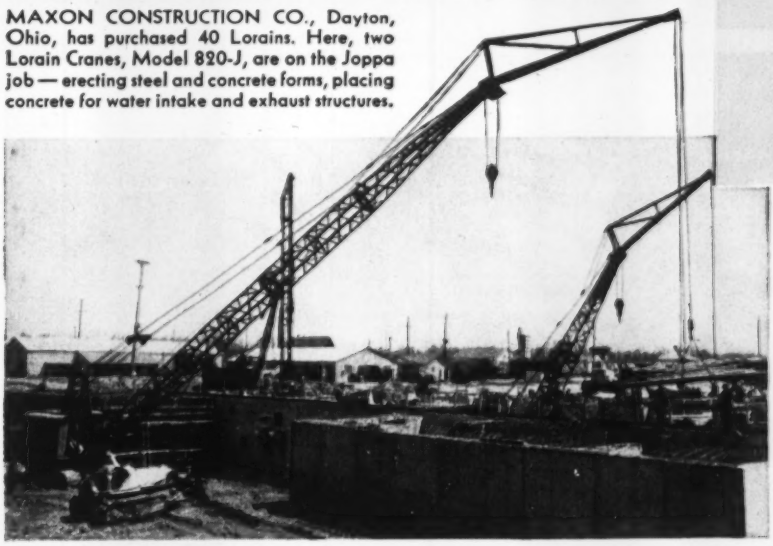
JOPPA JOB REPORT

JOPPA, ILLINOIS, PROJECT OF ELECTRIC ENERGY, INC. TO SUPPLY POWER FOR ATOMIC ENERGY COMMISSION PLANT, PADUCAH

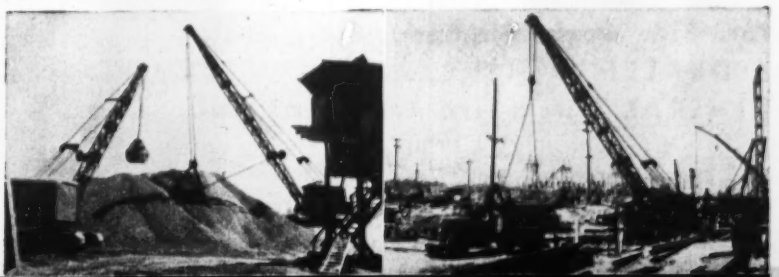
18 LORAINS

HELP BUILD NEW 1,300,000 K. W. $56,000,000 POWER PLANT

MAXON CONSTRUCTION CO., Dayton, Ohio, has purchased 40 Lorains. Here, two Lorain Cranes, Model 820-J, are on the Joppa job — erecting steel and concrete forms, placing concrete for water intake and exhaust structures.



EBASCO SERVICES, Inc., New York City, prime contractors on the huge Joppa project, use two Lorain Cranes, Model 820-J, to erect one of the many structures. Ebasco has purchased 11 Lorains.



EDGAR STEPHENS & SONS, Inc., Cairo, Illinois — a 5-time Lorain owner — supplies concrete for the project. These two 1-yd. Lorain Clamshells, Model 50-K, on 14 ft. long crawlers, unload, stockpile materials and charge a 30-yd. bin.

SAMUEL KRAUS CO., St. Louis, Missouri, has 3 of their 4 Lorains on their 1,000,000 cu. yd. earthmoving contract. A 20-ton Lorain Moto-Crane is shown unloading cars.

Big jobs — big names — and Lorain shovel-cranes go together. Here, in the making, is one of the world's greatest centers of electric power. Located on the north bank of the Ohio River, the big Joppa project will put forth 1,300,000 kilowatts that will feed the vital $700,000,000 Atomic Energy Commission plant across the river at Paducah. Two mammoth generating stations are being built — and Lorains are scattered all over the job.

It's a big job — all the way. Big name contractors are at work. Four of them moved in 18 Lorains to handle a wide variety of jobs. These four Lorain owners, named in the photo captions, have purchased a total of 60 Lorains.

Big jobs — big names — and Lorains go together — for reasons you would expect. Dependability through quality design. Selection to answer every job need. Experience that has proved Lorain performance. Big job — or small — these same reasons will pay you to check with your Thew-Lorain Distributor for your very next shovel-crane need!

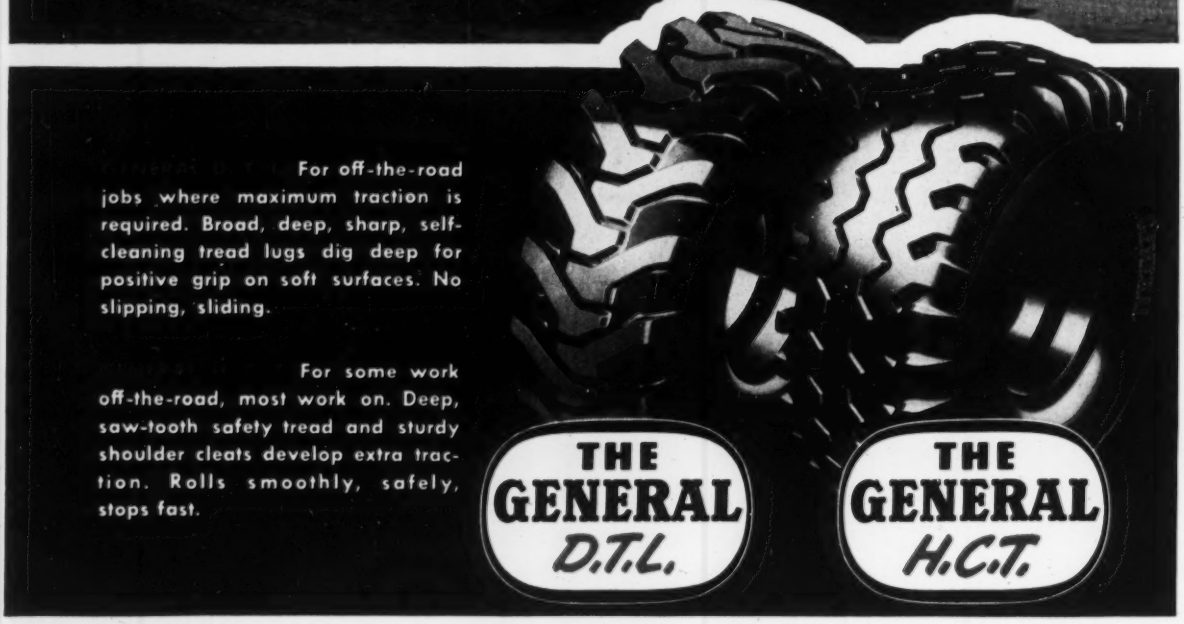
THE THEW SHOVEL CO.
LORAIN, OHIO

THEW LORAIN.

GENERALS combine Safety and Strength

Extra Traction and Speed . . . to do More Jobs Anywhere

Faster! Easier! at Lower Cost!



For off-the-road jobs where maximum traction is required. Broad, deep, sharp, self-cleaning tread lugs dig deep for positive grip on soft surfaces. No slipping, sliding.

THE GENERAL D.T.L.

For some work off-the-road, most work on. Deep, saw-tooth safety tread and sturdy shoulder cleats develop extra traction. Rolls smoothly, safely, stops fast.

THE GENERAL H.C.T.

Make Every Worn Tire Work Longer for More Profit!

Your GENERAL TIRE DEALER will KRAFT SYSTEM RECAP Worn Tires with the New GENERAL Truck Tire Tread of Your Choice

KRAFT SYSTEM RECAPPING
A GENERAL TIRE SERVICE

You're throwing away money when you throw away worn tires or accept an ordinary "adjustment" for them. Let your General Tire Dealer—a tire expert—restore worn tires with famous factory controlled Kraft System Recapping. You choose from the complete line of on and off-the-road new General Tire treads and he'll put that tread on your worn tire. He can do sectional repairs too. Get Kraft System Recapping—get more profit from every tire.

SPECIFY GENERAL TIRES ON YOUR NEW EQUIPMENT

fastened with a chain and free-sliding ring to prevent loss. There's swivel action between post and head plate to prevent binding. Shores are available in four sizes, reaching to 15 ft. MARVEL EQUIPMENT CO., OSHKOSH, WISCONSIN.

Kaylo insulating roof tile renamed Kaylo Roof Deck

To most persons the word tile portrays a vitreous product such as is used on floors, walls and ceilings—or a ceramic product for roof covering or sewer lines. Owens-Illinois Glass Co. found that their insulating roof tile was being mistaken for such products, so the company has officially changed the name of the product to Kaylo Roof Deck.

Redesigned hydraulic hoist fits wider range of trucks

The new Model 770 Galion hydraulic hoist pictured here has a load capacity of from 10 to 13 tons, a mounting height of only 14-⅝ in., and is recommended for use on 8- to 10-ft. dump bodies.

The unit weight 950 lb. It has an all-steel subframe, forged steel crosshead and rear hinges of cast steel. Fabricated steel plate lift arms and cast-steel lift links are all equipped with bronze bushings and grease fittings. Full details and specs are available from any Galion distributor or from THE GALION ALLSTEEL BODY COMPANY, GALION, OHIO.

SMITH BLAIR INC.

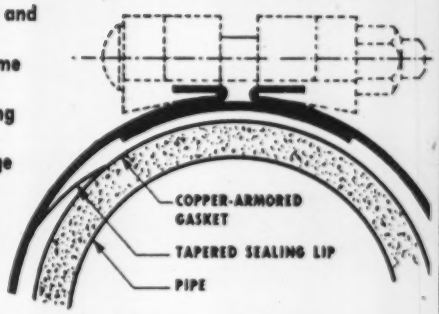
Full Circle CLAMP COUPLINGS

Widths: 5" to 30"
Sizes: 2" to 12"

★ For PERMANENTLY repairing broken or cracked pipe

By utilizing the flexibility, durability and strength of copper or stainless steel, the Smith-Blair Full Circle Clamp Coupling has proved itself to be a revolutionary repair unit. It is fast becoming the standard method of repair for the water works throughout the United States and Canada. It is a *permanent* repair unit for *any* type of pipe.

- Lowers Initial Cost
- Minimizes shut downs and shut down time
- Reduces installation time required
- Requires less excavating for installation
- Gives higher percentage of complete shut-offs on the first try — under pressure.



MANUFACTURERS OF: REPAIR CLAMPS, FULL CIRCLE CLAMP COUPLINGS, WATERLOCK RINGS, FLEXIBLE COUPLINGS, SERVICE CLAMPS, OTHER SPECIALTIES

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Main Office and Factory
555 Railroad Ave.
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DISTRIBUTORS IN PRINCIPAL CITIES

SEND FOR CATALOGUE DESCRIBING SMITH-BLAIR PRODUCTS

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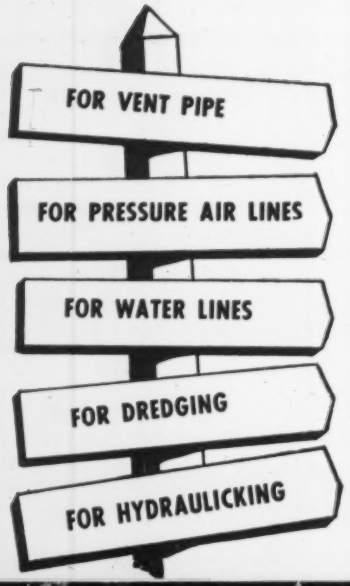
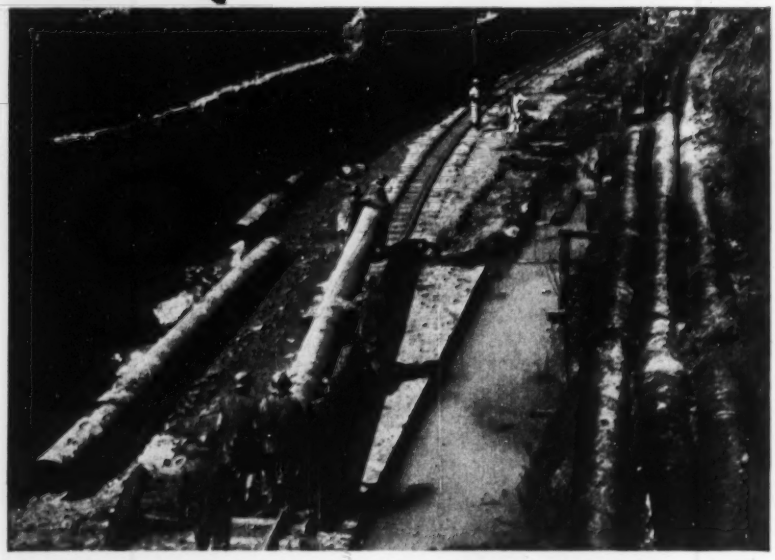
"Gunite" ..... the sand-cement product of the "CEMENT GUN," for Concrete and Masonry Repairs, Pre-Stressed Tanks, Steel Encasement and for lining Reservoirs, Sewers and Tunnels.

CEMENT GUN COMPANY
"GUNITE" CONTRACTORS
GENERAL OFFICES—ALLENTOWN, PENNA., U.S.A.
MANUFACTURERS OF THE "CEMENT GUN"



You're on the right track with

NAYLOR PIPE



You can't go wrong with Naylor Pipe for lines in construction service. Naylor gives you a light-weight pipe that's easier to handle and install—especially with Naylor's Wedge-Lock couplings. It differs from other light-weight pipe because it is built with a lockseam spiralwelded structure that adds extra strength and safety for heavy-duty service. That's why it fills so many applications for contractors and engineers. It will pay you to write for Bulletin No. 507 on line pipe and Bulletins No. 513 and No. 514 on Naylor Wedge-Lock couplings.

NAYLOR PIPE COMPANY
1248 East 92nd Street, Chicago 19, Illinois
New York Office: 350 Madison Avenue, New York 17, New York

NEW PRODUCTS

Twin unit combines furnace with home air conditioner

Last month the Bryant Heater Division of Affiliated Gas Equipment, Inc., entered the mass market with a package called the Command-Aire twins—a home air conditioner and an oil- or gas-fired furnace. Up to the present time, the company has restricted its air-conditioning business to custom-built installations.

The two units, styled exactly alike, can be used independently or together. Thus a contractor (or home owner) can install the furnace when the house is built and add the air-conditioning unit at a later date. The units are compact enough to fit into 7¾ cu ft of space, or the area of a small closet.

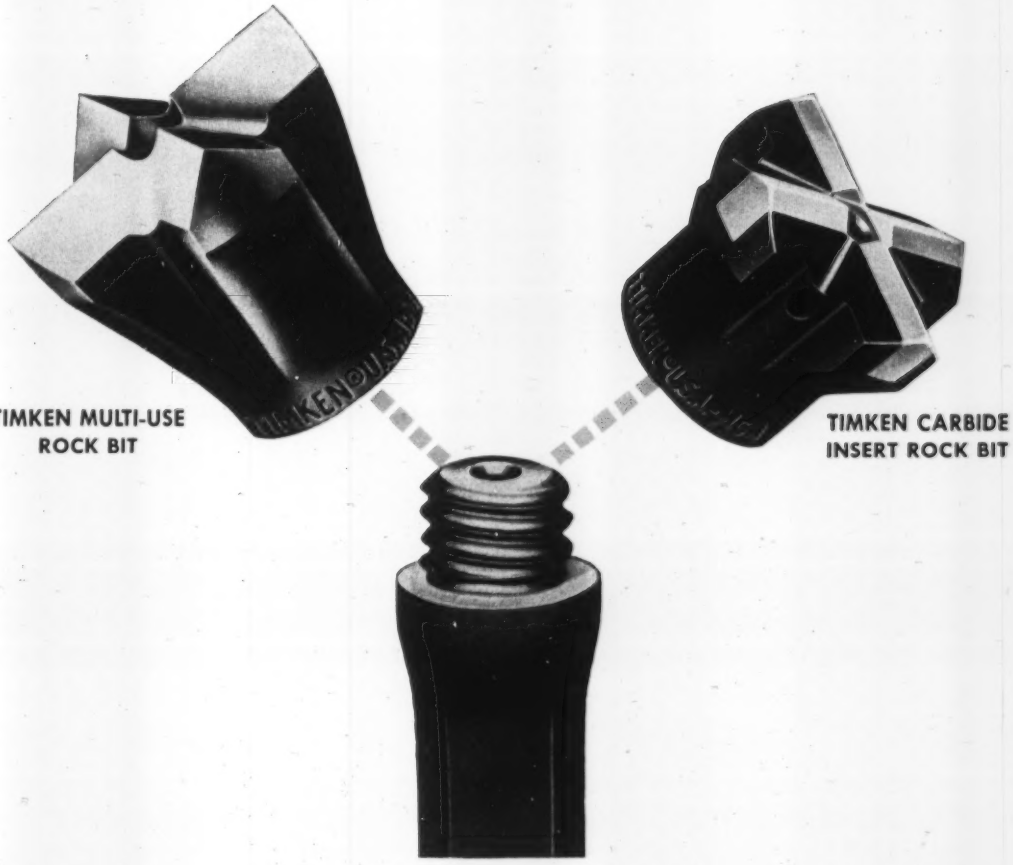
The company plans to turn out between 4,000 and 5,000 units of each type this year. Besides the contract builder, current owners of houses are potential buyers for the air-conditioning unit to increase the value of an older home. Bryant distributors, through their dealers, will offer to install twin units in a builder's model home and in homes for sale. If at the end of 90 days the builder hasn't sold the house with both units installed, the Bryant distributor will remove the air conditioner without charge. In this way the company is almost sure to sell the furnace as a starter and will inform the home buyer later of the ease of installing the air conditioner at a later date with a minimum of adjustment. Bryant Heater Div., Affiliated Gas Equipment Inc., 17877 St. Clair, Cleveland, Ohio.

Redesigned 300-amp ac welder announced by G.E.

A redesigned 300-amp ac welding transformer, featuring stepless current selection from 40 to 375 amperes, has been announced by General Electric Co.'s Welding Department. Easy current selections are possible by using a finely-threaded screw adjustment for practically all applications from low-current sheet metal work to heavy-duty, high-current industrial jobs. It accommodates electrodes from $\frac{3}{32}$ to $\frac{1}{4}$ in. diameter and has a quick-change switch for changing from high to low range, or reverse.

The G-E welder is built with studs at the base to simplify connecting electrodes and work cables. Power-factor correction capacitors assure low power costs, according to the company. The machine measures 21 in. in diameter and is 36 in. high. Its weight is 328 lb. Welding Dept., General Electric Co., Schnectady 5, New York.

Let one steel do the work of two with interchangeable TIMKEN® bits!



TIMKEN MULTI-USE ROCK BIT

TIMKEN CARBIDE INSERT ROCK BIT

YOU don't need separate steels for each bit type when you use Timken® interchangeable rock bits. One steel does the work of two because both the Timken multi-use and carbide insert bits fit the same drill steel. With the two Timken bit types and only one steel you can switch quickly to the most economical bit as the ground changes. And you can do it right on the job.

Use Timken multi-use bits for ordinary ground. With correct and controlled reconditioning, they'll give you the lowest cost per foot of hole when full increments of steel can be drilled.

For greatest economy when you hit hard or abrasive ground, switch to Timken carbide insert bits. They're your best bet for maximum speed drilling, constant-gage holes, small diameter blast holes and very deep holes.

Have both types of Timken bits on hand, and you'll have the answer to every one of your drilling problems.

Timken carbide insert bits and multi-use bits are interchangeable in each thread series. And they have these three important advantages: (1) made from electric furnace Timken fine alloy steel, (2) threads are not subject to drilling impact because of the special shoulder union developed by the Timken Company, (3) quickly and easily changed.

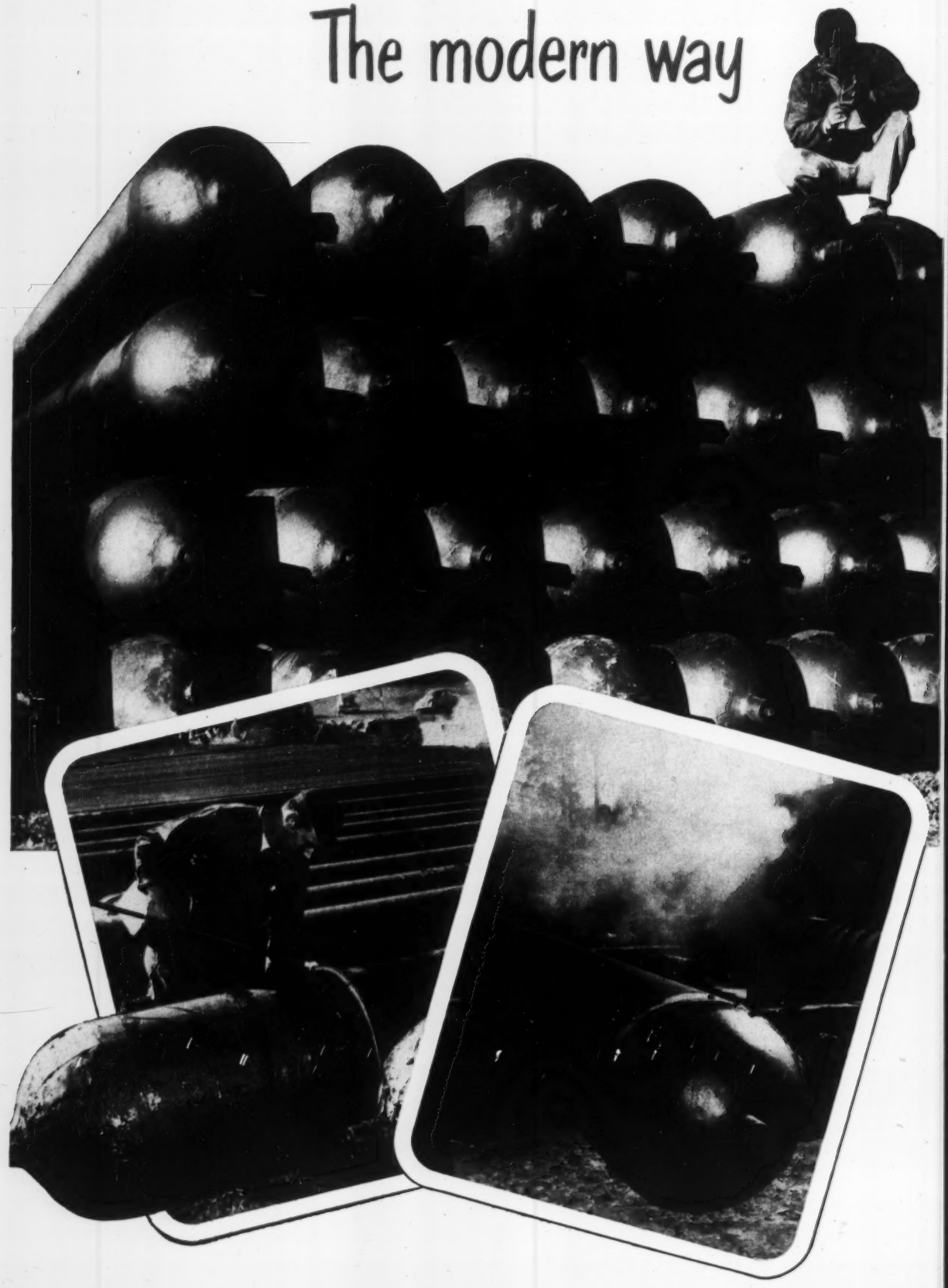
More than 20-years experience of our Rock Bit Engineering Service is available to you in helping to select the best bits for your job. Write The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

your best bet for the best bit . . . for every job

TIMKEN

TRADE MARK REG. U. S. PAT. OFF.

The modern way



to store gas

as exemplified by an installation under construction for the

WASHINGTON GAS LIGHT COMPANY

where 2800 NATIONAL SEAMLESS BOTTLES will store 70 million cubic feet...

—safely underground

● *The Washington Gas Light Company installation is a combination of underground high pressure natural gas storage and propane-air. The steel bottles are laid out in blocks of 40 bottles, each block storing a million cubic feet of gas. The bottles are installed in the ground with 4 feet of cover, after being coated and wrapped. In addition, the storage bottles and piping will be cathodically protected. Stone and Webster Engineering Corporation designed and is constructing the plant.*

Some of the advantages of this type of storage are:

SAFETY. The bottles are unaffected by storms, high winds or lightning. They are not a hazard to or from aviation.

UNIFORM PRESSURE. Underground temperatures are relatively stable the year round. Gas pressure does not fluctuate like it would if stored above ground.

COMPACT. These high pressure bottles take up less room.

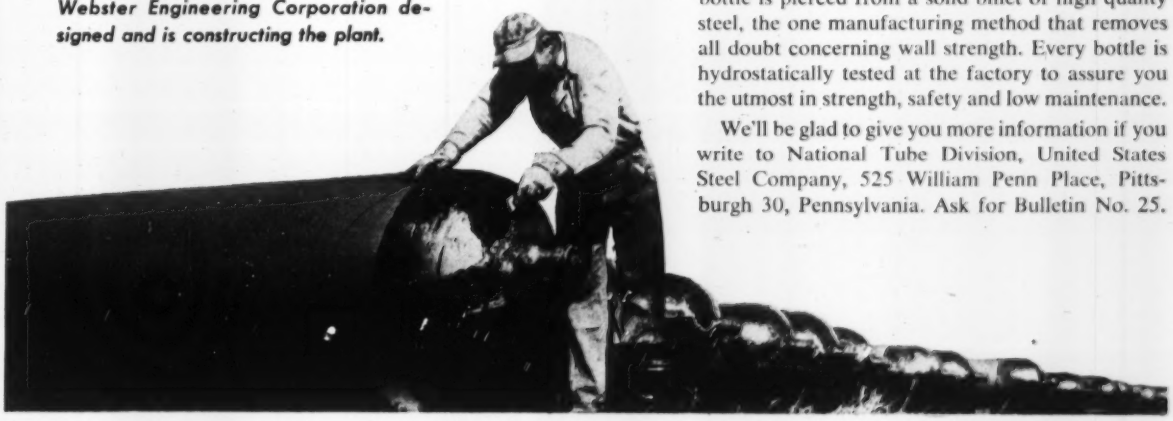
STABLE. Bottles buried won't vibrate and settle like a surface installation.

EASIER MAINTENANCE. Leaks are easily located and any block may be purged and taken off the line without interruption of flow from other blocks. These National Seamless Bottles are inspected twice at the factory and twice in the field.

LESS MAINTENANCE. Unlike above-ground installations, these bottles do not have to be painted periodically and they do not require constant inspection and protection against the elements.

When you lay long range plans for a gas storage system, consider the advantages of underground storage with National Seamless Steel Bottles. Each bottle is pierced from a solid billet of high quality steel, the one manufacturing method that removes all doubt concerning wall strength. Every bottle is hydrostatically tested at the factory to assure you the utmost in strength, safety and low maintenance.

We'll be glad to give you more information if you write to National Tube Division, United States Steel Company, 525 William Penn Place, Pittsburgh 30, Pennsylvania. Ask for Bulletin No. 25.



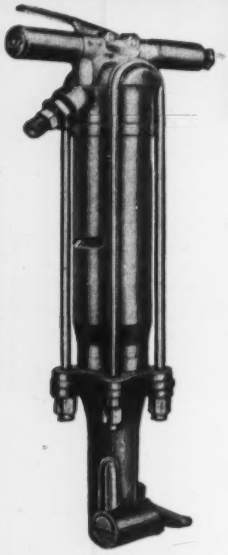
NATIONAL TUBE DIVISION, UNITED STATES STEEL CORPORATION, PITTSBURGH, PA.
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

U·S·S NATIONAL SEAMLESS STEEL BOTTLES

USS

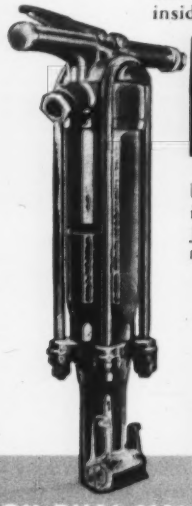
UNITED STATES STEEL

K ...is for the Knockout power in JOY PAVING BREAKERS



K-89 ... New Super heavyweight

There's real knockout power in this 90 lb. super breaker. The K-89 is designed to speed up demolition of those extra tough-and-heavy reinforced concrete sections, etc. Like all Joy SILVER STREAK Paving Breakers, the K-89 is cadmium-plated inside and out, which prevents rusting, eliminates scoring and aids lubrication.



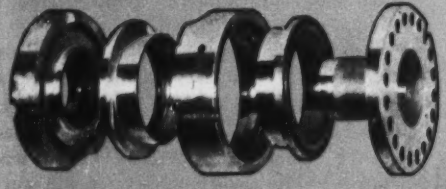
K-81 ... heavyweight

Handles tough demolition jobs economically and efficiently—breaks more concrete because it strikes more and heavier blows, and because it's easier to hold. Outstanding features of the K-81 include the exclusive Joy "Dual Valve," flat-sided cylinder for easy holding against operator's leg, replaceable chuck bushings, "U" type side rods and rugged cam-type retainer.

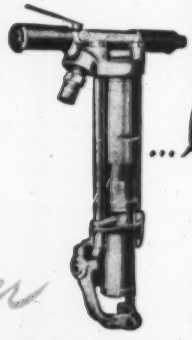
K-61 ...medium weight

Specially suited for thin-section concrete and other light demolition jobs—hard-hitting and easy-handling like the K-81, but lighter in weight. Many of the parts, such as the chuck housing, chuck bushing and throttle, will fit both the K-61 and K-81—a considerable saving in repair parts stock.

The THRIFTY JOY DUAL-VALVE
Makes Air Do More Work!



Get the facts about Joy paving breakers—also Joy compressors, rock drills, wagon drills, core drills, hoists, spaders, trench diggers, etc. See your nearest Joy office or distributor.



K-31 ...lightweight

Only 30 lbs.—a powerful, easy-handling little breaker that's ideal for light demolition and all work where the operator must support the entire weight of the tool, or where footing is not solid, as on scaffolds.

Write for Bulletins, or

Consult a Joy Engineer

OVER 100 YEARS OF ENGINEERING LEADERSHIP

W&D C 3517

JOY MANUFACTURING COMPANY

GENERAL OFFICES: HENRY W. OLIVER BUILDING · PITTSBURGH 22, PA.

IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LIMITED, GALT, ONTARIO

PUBLICATIONS

Rotary Distributors—A 16-page bulletin describes latest models and applications of rotating mechanisms for distributing fluids, as in the trickling filter treatment of sewage and industrial wastes. Dimensions of various models and charts to aid in selection of type and size of model are included. Recirculation processes are described; sample specifications are written out for the manufacturer's distributors. RALPH B. CARTER CO., HACKENSACK, N. J.

Highway Guardrails—Safety and simplicity are emphasized in a 4-page folder on flexible metal highway guardrails. High adaptability and low maintenance are illustrated with numerous photographs. FLEX-BEAM GUARDRAIL, ARMCO DRAINAGE AND METAL PRODUCTS, INC., MIDDLETOWN, OHIO.

Roof Insulation—Extensive use and wide variety of jobs using it are the basic material of this large fold-up sheet on Fiberglas roof insulation. Under numerous illustrations are lists of jobs with their architects and builders who used the material. Also included are data concerning thermal conductance and application specifications. OWENS-CORNING FIBERGLAS CORPORATION, TOLEDO 1, OHIO.

Castings—Users of castings made of "critical" materials can find available and successful replacements according to a 20-page booklet describing various kinds and properties of MEEHANITE castings. The well illustrated booklet is devoted to a series of case histories showing how in recent months critical material shortages have been solved by the use of Meehanite castings. Also included are alphabetical tabulations showing specific replacements of alloyed irons and steels, brass, bronze, forgings, etc. The type of Meehanite metal used for each application is also provided. MEEHANITE METAL CORPORATION, 714 NORTH AVENUE, NEW ROCHELLE, N. Y.

Movable Metal Walls—The efficiency of office space under the inevitable changes in business can be heightened greatly by the use of movable metal partitions, according to this 47-page booklet. Illustrated in detail, it describes various types of metal walls and available accessories such as doors, ceilings, transoms, shelving, bookcases, hardware, etc. Ask for Mills Movable Metal Wall Catalog No. 53. MILLS COMPANY, 975 WAYSIDE ROAD, CLEVELAND, OHIO.

ADVERTISERS IN THIS ISSUE

Barber-Greene Company 42
Belmont Iron Works 56
Bethlehem Steel Co. 49
Blackhawk Mfg. Co. 12
Blaw Knox Div., Blaw Knox Co. 39
Byers Co., A. M. ..... 2nd Cover

Cement Gun Company 81
Chain Belt Co. 8
Chevrolet Motor Div., General Motors Corp. 40
Clipper Mfg. Co. 53

Delta Power Tool Div., Rockwell Mfg. Co. 11
Deslauriers Column Mold Co., Inc. 51
Dorr Co., The 78
Dow Chemical Co. 16
Dudgeon, Inc., Richard 54

Economy Forms Corp. 53

Flint Steel Corp. 42
Foundation Equip. Corp. 2
Fuller Mfg. Co. 13

General Tire & Rubber Co. 80
Goodyear Tire & Rubber Co. 1
Gilson Screen Company 43
Gradall Div., Warner & Swasey Co. 35
Griffin Wellpoint Corp. 52
Gunite Concrete & Const. Co. 78
Gunite Construction Co. 46

Harnischfeger Corp. 10
Heil Company, The 4, 5

Irving Subway Grating Co. 76
Irvington Form & Tank Corp. 54

Joy Mfg. Co. 86

Kim Hotstart Mfg. Co. 55

Lee & Son, W. W. 53
LeTourneau, Inc., R. G. 7
Lewis & McDowell, Inc. 56
Lipe-Rollway Corp. 15

Master Builders Co. ..... 3rd Cover
McGraw-Hill Book Co. 56

National Tube Div., U. S. Steel Corp. .. 84, 85
Naylor Pipe Co. 82
Northwest Engineering Company 3

Pennsylvania Drilling Co. 54
Portland Cement Assn. 36
Pusey-Jones Corp. 59

Raymond Concrete Pile Co. 9
Ryerson & Sons, Inc., Jos. T. 52

Sauerman Bros., Inc. 76
Smith-Blair, Inc. 81
Sprague & Henwood, Inc. 78
Stoody Company 77
Sturtevant Co., P. A. 54

Texas Company ..... 4th Cover
Thew Shovel Co., The 79
Thurman Machine Co. 58
Timken Roller Bearing Co. 83
Tinney Drilling Company 51
Trailer Village, Inc. 56

U. S. Pipe & Foundry Co. 6
U. S. Rubber Co. 18
Universal Atlas Cement Co. 20

Vulcan Iron Works 42

Warner & Swasey Co. 35
Webb Mfg. Co. 51
Wheeling Corrugated Co. 14
Williams Co., J. H. 46
Wood Co., R. D. 46

PROFESSIONAL SERVICES 75

SEARCHLIGHT SECTION

(Classified Advertising)

H. E. Hilty, Mgr.

Employment
Positions Vacant 67, 68
Selling Opportunities Offered 67
Positions Wanted 67, 68
Selling Opportunities Wanted 68

Special Services 68

Educational
Schools 68
Tutoring 68

Business Opportunities

Notices
Proposal 64-67

Equipment
(Used or Surplus New)
For Rent 73
For Sale 69-73
Piling 72
Pipe 72
Rail 74
Surveying Instruments 73

Wanted
Equipment 74

ADVERTISERS INDEX 74

ENGINEERING NEWS-RECORD

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EDITORIALS

Moles awards meet a need

As a general thing it could be said that the supply of prizes and awards available each year is adequate to the need. But closer inspection will show that these forms of recognition are predominantly in the field of design and research. The contractors, and particularly those in the field of heavy construction, largely go unheralded and unsung.

Perhaps this is why a small organization of New York contractors, mostly social in nature, can command such respect for its annual awards for service to construction. (see p. 25). The contracting fraternity appreciates the fact that for the last 12 years the Moles have filled a sort of void—in meeting the need for contractors recognition.

Because one award each year is made to a non-member, the Moles are able to accord recognition on a national scale. Member awards, too, usually are made to men who have distinguished themselves and exalted construction in the whole country. In creating the award, and maintaining high standards for selection, the Moles deserve one of their own awards, "for service to construction."

The fury of the sea

The oft-vaunted precision of the French language has never showed up to better advantage than in the term used for the English Channel—la manche, or "the sleeve." For it is precisely because it is a sleeve, with a progressively narrowing opening, that tidal floods have caused such devastation and loss of life on the English, Dutch and Belgian North Sea coasts.

Abnormally high tides, whipped up by hurricane velocity winds from the north piled up at the sleeve's entrance. Breaching dikes and flowing up shallow river estuaries to inundate the fens of East Anglia and the polders of Holland and Belgium, the water reached areas that have resisted overflow during recorded history. This is indeed one of the "thousand year" floods that meteorologist and hydrologists warn about. Even though design scarcely can be afforded to resist such floods, designers are put on notice that they can happen and that no effort should be spared to minimize their damage.

What the extent of repair and replacement of wrecked structures will be cannot yet even be estimated. That it may not be as great as most of the emotionally inspired guesses so far made is probable. It is also probable that the damage to farm land from salt deposition will be of minor instead of the major character being claimed. Walcheren Island, in the estuary approach to the port of Antwerp, Belgium, one of the major areas of damage this time, also was flooded during the war as a part of the attack on the German stronghold there. Ingenuity and hard work put all of its polders back in production within a year. There was little, if any, salt damage to the soil.

These probabilities, even though borne out by fact, do not, however, make the flood less than one of the major disasters of modern times. Americans will want their government to lend every possible assistance to the stricken countries. And it would be surprising if they did not expect their own engineers, who may be charged with responsibility for U. S. coastal protection, to redouble their efforts to improve our own defenses. We have no "sleeves" to focus a storm's fury on a particular area, but extensive and unnecessary damage can be caused by winds and tides of much less force than the one that devastated Europe's shoreline.

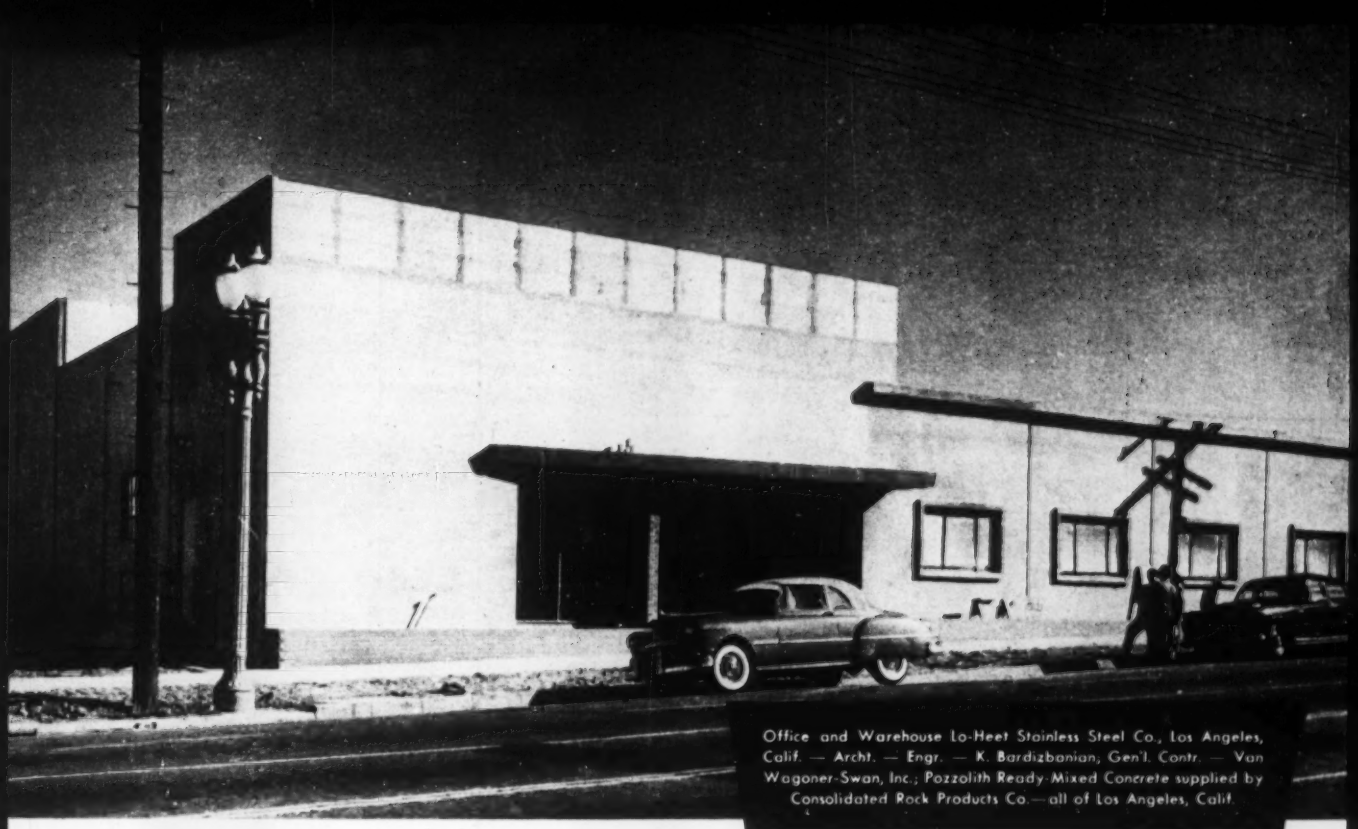
The technical institute

The shortage of engineers, which The Advertising Council is hoping to help alleviate by carrying the message to the masses (ENR Feb. 5, p. 152), was attacked from another direction at the fifth college-industry conference, held at Northwestern University last month. There, Titus G. LeClair, manager of engineering, Commonwealth Edison Co., proposed that the effectiveness of the engineers a company now employs be increased from 10% to 15% by surrounding them with dependable technicians. To increase the supply of such technicians, Mr. LeClair urged more technical institutes.

If, as our educators claim, no significant increase in the number of engineering graduates is possible for several years, this proposal has much merit. At least four years is required for the basic scholastic training of an engineer, but a skilled technician, who can take a lot of routine off an engineer's hands, can be trained in a technical institute in two years.

The high cost of an engineering education also keeps many parents from encouraging their sons to take engineering. Moreover, as Dean Clarence E. Deakin, Illinois Institute of Technology, observed at the conference, the very industries that need engineers are offering high school graduates with mechanical skills such attractive wages as to dim their ambitions for getting an engineering education.

The technical institute offers a way around both these roadblocks. Training in a technical institute costs less than in an engineering school. And since the training is less onerous and time-consuming it can be obtained more readily while working at a job in industry than can an engineering education. Moreover, technical institute graduates would be prime candidates for later education in an engineering school. Both as a means of reducing the effect of the present engineer shortage and of training new candidates for engineering schools, the technical institute should not be overlooked.



Office and Warehouse Lo-Heet Stainless Steel Co., Los Angeles, Calif. — Archt. — Engr. — K. Bardizbanian, Gen'l. Contr. — Van Wagoner-Swan, Inc.; Pozzolith Ready-Mixed Concrete supplied by Consolidated Rock Products Co.— all of Los Angeles, Calif.

POZZOLITH READY-MIXED CONCRETE . . . Better, Faster, in Tilt-Up Construction . . .

reports general contractor

Pozzolith* Ready-Mixed Concrete is helping builders overcome the problems encountered in tilt-up construction.

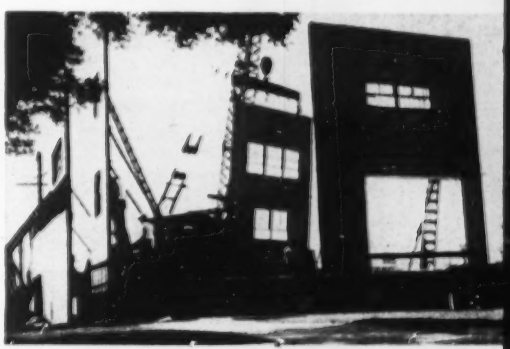
Well-known Los Angeles general contractor Van Wagoner-Swan, Inc., writes:

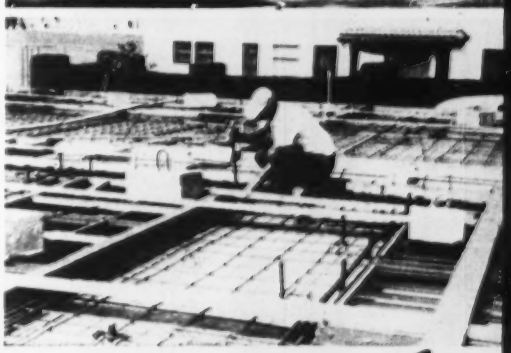
> "In the construction of our tilt-up concrete units, we have found that Pozzolith definitely decreases shrinkage and the cracking which results from this shrinkage.
>
> "Pozzolith also increases the strength of concrete, allowing us to shorten the time materially between casting and lifting. The decrease in water content with Pozzolith eliminates crazing of surface."

Whatever *your* concrete requirements, Pozzolith will enable you to obtain them *at lower cost than by any other means.*

Full information and Pozzolith booklet sent upon request.

* Pozzolith — the cement-dispersing, water-reducing agent which makes available the optimum amount of air in concrete. Developed by The Master Builders Co. in 1933. Contains calcium lignosulfonate as the basic ingredient. Added to concrete mix at mixer.



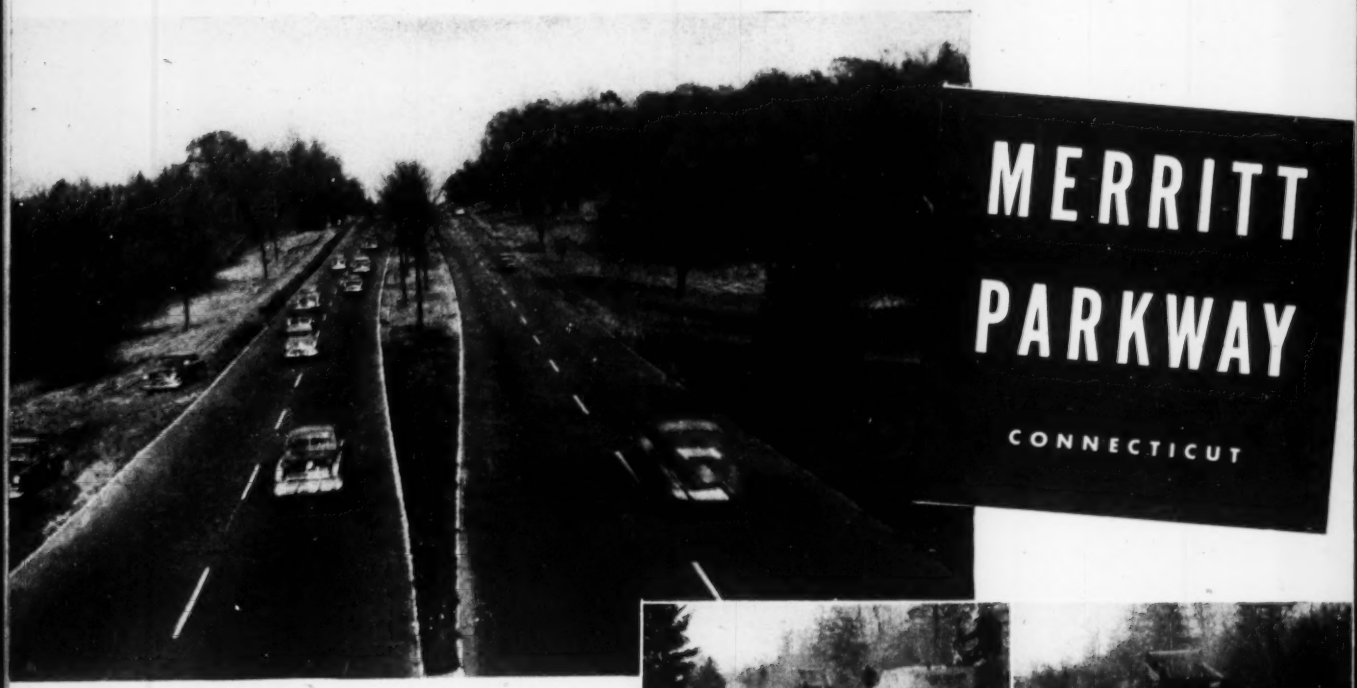


Over 600 Leading Ready-Mixed Plants Are Producing Pozzolith Ready-Mixed Concrete

the MASTER BUILDERS Co.

CLEVELAND 3, OHIO — Subsidiary of American-Marietta Company — TORONTO, ONTARIO

Where traffic averages 28,000 vehicles a day



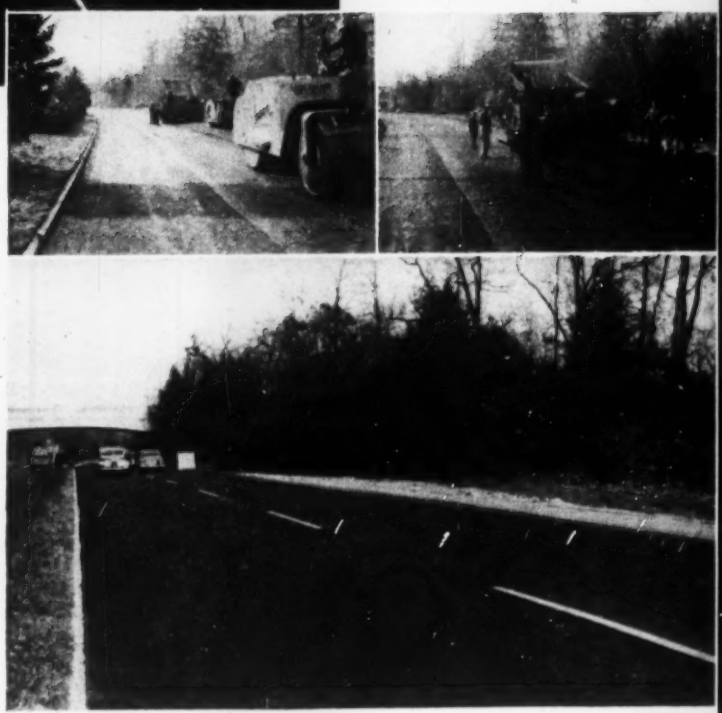
Section of the Merritt Parkway which was paved with Texaco Asphaltic Concrete in 1949.

Connecticut's Merritt Parkway is one of the busiest traffic arteries in the East. During 1952, traffic on one section averaged 28,000 vehicles a day and reached a 24-hour peak of 55,000.

Resilient, heavy-duty Texaco Asphaltic Concrete was used last year to resurface another section of this heavily traveled route. Joints in the old concrete pavement were cut out to a depth of one inch and filled with a fine asphalt mix. Following a tack coat of RC cutback asphalt, the hot-mix Texaco Asphaltic Concrete was laid in two courses, a 1½-inch binder course and 1-inch top.

Whether laid over an old pavement, as on the Merritt Parkway, or on a new foundation, hot-mix Texaco Asphaltic Concrete is a sound choice wherever heavy traffic must be served. Its shock-absorbing resilience, freedom from joints, low susceptibility to changing temperatures and immunity to ice control chemicals insure years of satisfactory service with low upkeep cost.

Two helpful booklets are available which describe hot-mix Texaco Asphaltic Concrete, as well as the various other types of road and street construction in which Texaco Asphalt Cements, Cutback Asphalts and Slow-curing Asphaltic Oils are used. Copies may be obtained without cost or obligation by writing our nearest office.



Above photos show Texaco Asphaltic Concrete, under construction and completed, on another section of the Parkway. The contractor was Cold Mix, Inc., Port Chester, N. Y.

THE TEXAS COMPANY, Asphalt Sales Dept., 135 E. 42nd Street, New York City 17

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TEXACO

REG T M

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